

## SUMMARY.

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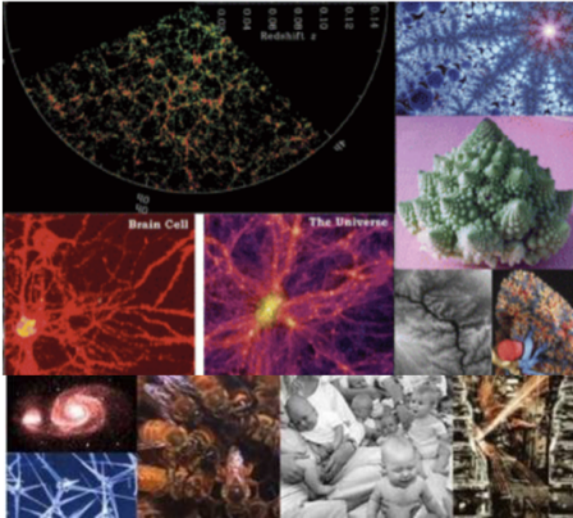
#### **$\Delta+4,3$ scales: Cosmology & Astrophysics: Scalar big-bangs. Galatoms. Hyper-universe.**

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## 5TH DIMENSION METRIC AND THE NESTED UNIVERSE.



When we google the 5<sup>th</sup> dimension one gets surprised by the quantity of speculative answers to a question, which is no longer pseudo-science, but has been for two decades a field of research in systems sciences rather than physics (: no, the answers of google, considering the fifth dimension the upper-self etc. seem to be very popular, but are to 5D science more like a medium in earlier XX c. talking about the 4th dimension as astrological awareness, for lack of understanding of Einstein's **metric functions** of the 4th dimension).

This is the key word that differentiates pseudo-science from a proper scientific description of a dimension of space-time, *the existence of a metric function that describes a dimension and allows to travel through it*. Why the 5th dimension metrics are not well known in modern science has to do with the fact it is not researched in physics but systemics, the mother discipline of all sciences of information, far less

popular than physics; and the proprietary feeling physicists acquired on space-time matters since Galileo defined its 3D metric function  $v=s/t$  completed with Einstein's 4D formalism, which makes difficult to spread the knowledge on space-time acquired on other disciplines. The arguments still raging about evolution, the fundamental theory of time in terms of information, as the 'arrow that defines' the future of species but has nothing to do with Relativity and locomotion is a clear case of that difficulty.

Indeed, we know since the XIX c. that the creation of the 'future time' of an existential entity is not ONLY mediated by the arrow of **locomotion** and entropy studied by physicists with Relativity Metrics (Galileo's  $V=s/t$  and Einstein's more complex formalism), but there is a second arrow that defines the 'future' of existential species - the evolution of its information. So time – *the changes=motions that defines the existence of any species*, has at least 2 dimensions, locomotion or ordered translation in space and a more disordered version, entropy (scattered motion that 'dissolves' the inner form of the system, akin to death)...

And in-form-ation, generation of form, inverse to entropy, as it requires the social gathering of parts into wholes; happening without external locomotions, as an internal trans-formation of **form**. This evolution of organic form as opposed to external change – translation in space, without evolution of form - is what systemics calls the scalar fifth dimension of time that it applies to all sciences, as all species evolve its form.

Specifically in systems sciences we model reality as an organic fractal of relative size scales, that evolve from parts into larger wholes, from particles into atoms, molecules, cells, matter states and so on till reaching the Universe, shaped by social and organic networks coded with information.

In the graph the Universe is a fractal that reproduces 'forms with motion', informations and then **organizes** them in networks and systems that evolve into larger organic systems creating the scalar structure of reality.

Thus we call *the sum of all those co-existing scales of parts and wholes the fifth dimension*.

Thus reality has a final key feature overlooked for too long: the co-existence of all those systems of space and time in several scales of relative size from the smallest atom to the largest galaxy that put together create a dual scalar '4<sup>th</sup> and 5<sup>th</sup> Dimension of parts and wholes, which we shall call the 'social dimension of evolution' and the 'entropic dimension of dissolution'.

Mathematically then it is necessary to find a metric function to define this new dimension of spacetime. Since a dimension only exists when we can write a mathematical simple metric that leaves the dimension invariant when we change our parameters of space and time - hence we travel through it. (Klein).

This function, as all space-time metric functions, is simple. So we write using  $\delta$  for cyclic time instead of  $t$ :

$$\$ (Lineal\ Size/Space\ Volume) \times \delta (cyclic\ speed\ of\ its\ time\ clocks) = C_i: Constant\ Plane\ of\ timespace (ab.\Delta_i)$$

We call it a function, because as we keep exploring in depth, the concepts of Space and Time in all its varieties, we shall see it is the origin of multiple 'solutions', a whole family of function, from where we shall derive most of the logic relationships and particular equations of each science.

So according to those metrics, smaller systems in space have faster time clocks. And as information is stored in the frequency and form of those cycles, smaller systems have more information, coding larger ones: genes code cells, memes societies and particles' quantum numbers code atoms and molecules.

### The nested Universe.



We shall use the metrics of the 5<sup>th</sup> scalar dimension to explain the fractal, nested Universe and its scales, shown in the graph. As 5D metrics balances the survival and symbiotic existence of all parts of the Universe, and all parts of a super organism, and defines 'what codes information' - the small being, and what codes energy- the larger whole, establishing the 'harmony' of all the scales of the

Universe, and explaining all its fundamental constants which are ratios between spatial volumes and informative clocks of temporal energy.

It follows from a nested structure and the search for creative, organic balances, a symbiotic relationship between the  $\Delta-i$  smaller parts that have more speed of time clocks, which carry its in-form-ation in the form and frequency of its cycles, coding larger systems: genes code cells, memes code social organisms and particles' quantum numbers code atoms and molecules. And the larger,  $\Delta+i$  larger envelopes, membranes (static, dimensional view) or angular momentums (dynamic view as time=motions) which have more spatial energy and enclose and control in synchronicity its faster smaller parts, creating the co-existing scales and symbiotic cycles of super organisms in any system of the Universe.

For example, chips become smaller as they evolve into faster brains. Every 2 years a chip doubles its capacity to think, as it dwindles in size. Such process follows a generic law of evolution I call the 'Black hole Law', which computer scientists know as the 'Chip paradox' or 'Moore Law': maximal informative capacity= minimal spatial extension. The reason is obvious: to think, to calculate you have to communicate in-form-ation, forms between elements of any informative system. The smaller the brain, the faster the communication that takes place within that brain and the faster you can calculate and process information in a logic manner. And vice versa: larger wholes accumulate more energy and are stronger than parts, so they can protect and feed them. So wholes and parts co-exist in several scales forming super organisms.

The metric function of the fifth dimension of space-time ( $ab.\Delta$ ) defines 3 known scales of physical systems, with different quantity of information according to 5D metrics,  $Sx\delta=k$ .

Those metrics means information is higher in the smaller 'quantum plane' than in the larger gravitational one, and inversely the size of its physical parts is larger ins the Gravitational cosmological 'plane' than in the quantum one, with the human thermodynamic scale in-between.

But as there is no reason to stop the scales of the fractal in particles and galaxies, there is a 'potential' fourth,  $\Delta\pm 4$  organic plane defined 'above' the galaxy, ( $\Delta+4$ , dark energy world) and below the quantum world ( $\Delta-4$ , Bohm's quantum potential), which represents the larger cosmos.

Further on, according to the fractal, nested principle any larger organic system, encloses smaller nested systems. Thus the  $\Delta\pm 4$  cosmos contains  $\Delta\pm 3$  galaxies, which contain  $\Delta\pm 2$  solar systems and planets, which

contain  $\Delta \pm 1$  thermodynamic organisms and matter states, described by the human  $\Delta^0$  mind languages, contained on our brains.

Thus bigger systems paradoxically are 'supported' by the smallest ones, in the same manner than within the nested planet, bigger mammals (whales) eat the smallest animals (Plancktons).

**A fast review of physical sciences under 5D metrics. The galaxy's metric. Its 2 fundamental constants**

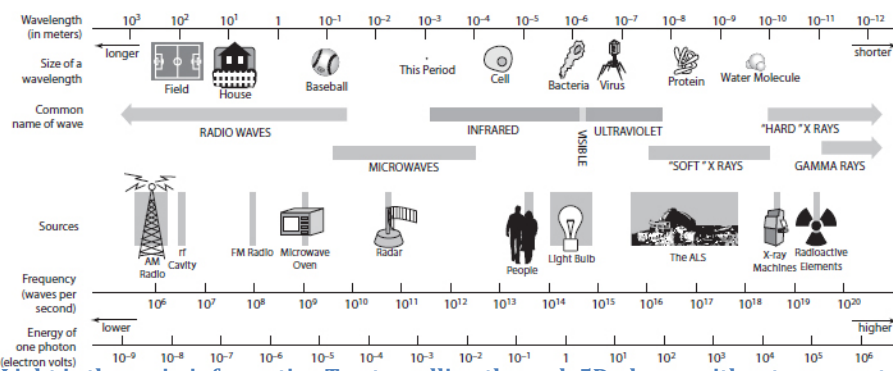
Thus 5D metrics describe organic properties because it balances the survival symbiotic existence of all parts of the Universe in any of its fractal super organisms, made to the image an likeness of the whole, as the smaller beings 'code information' with faster clocks, and the larger wholes enclose and protect the smaller parts with its greater energy- establishing an organic 'harmony' in all the scales of the Universe, and explaining its fundamental constants, which are ratios between spatial volumes enclosed by membranes and angular momentums of informative clocks of temporal energy. The galaxy's 5D metric is immediate:  $\$(c) \times \delta (h) = \text{Constant}$ , as its largest speed-distance is light and its minimal unit of cyclical information, is the Planck constant of angular momentum, the unit of the 3 human physical parameters of **spatial size, cyclical time frequency and 'scale'** (Active magnitude):  $h = \text{mass } (\Delta) \times \text{area } (S) \times \text{frequency } (\delta)$ .

Which becomes the unit of physics, related to the unit of mathematics, the fractal point.

Another immediate consequence of the scalar Nature of the Universe is that points have parts, which grow in size as we come closer to them, peering in the inner regions of its fifth dimension. So a star from a point becomes a world, and so should a point-particle if we could peer inside its form – to the 'point' that the closest self-similarity of scales happens between galaxies and atoms, stars and photons, in a potentially infinite scalar Universe. What this means is that an absolute zero does NOT exist. So 0 becomes 0', a 'finitesimal unit', which will always remain as the fractal Universe abhors vacuum. Thus in any parameter we find a residual amount, even if it is undistinguishable from a larger scale. There is no absolute OK, but always remains a bit of motion=temporal energy. This, means also in terms of h, that vacuum space has always a reminder, h-uncertainty unit, no longer an abstract concept but the minimal unit of light space-time, we shall call h, 'Planckton', the minimal fractal organism which feeds or becomes the 'cellular unit' of all other species of the Galaxy, as Plankton is the minimal unit of the biologic Universe which starts the trophic pyramid of life or as a cell starts the evolution of multicellular organisms.

5D metrics improves knowledge of space & time in all sciences, not only in our models of physical systems will be the theme of this paper. Even if physicists stubbornly refuse to treat information with the same value than entropy. So they call it negentropy, and when I used to give conferences on the scalar Universe in congresses of systemics there were no physicists on attendance – as the dimension of creation of social forms of information, and the organic wholes they entangled are not part of the properties they confer to physical systems.

Ultimately 5D metrics is a law of balance between 2 elements of reality, 'scalar space' akin to information and 'cyclical time' akin to conserved energy. Yet as humans have disconnected their concepts of space and time of its 'broken parts', bits of information and bites of energy,, equalizing all the time cycles of reality with a lineal equation,  $v=s/t$ , and a single mechanical clock, and have pegged all the bits of information of its puzzles of space; and finally compressed all the planes of space-time into a single 'space continuum'; and then separating them as the constitutive elements of reality we need to reconstruct both terms in its more complex reality



nature, as we are all made of those organic vital fractal scales of space & its moving time cycles. In graph, only waves that can branch into hyperbolic networks, can carry information thru 5D spacetime. Particles move thru Time; entropy lines thru Space.

## Some initial comments on the planes of space-time and the philosophy of physics.

To have all the elements to construct reality besides S and T we need  $\Delta$ , the scalar property of reality, by which 'space-time beings' are made of smaller ones and form part of larger wholes. We talk of multiple planes of space-time *because each scale has different parameters as parts becomes wholes, unit of a next scale*. We will explain this as the product of network formation, emergence and other disciplines of General Systems Sciences, of which 5D is a formal view. In mathematics 'fractal points will evolve' through network-lines into topological planes of space-time. This discontinuity between scales *is real. There are transition regions between planes, which can only be crossed with loss of information, therefore only by energy, by entropic motion, by 'death' of a system*. Later we shall study those regions, evident in physical equations as there are asymptotic barriers – Lorentz transformations in the c-barrier; negative temperature in the 0 barrier; etc. What then the Universe conserves is easy to see: *the total volume of space-time of each scale; that is its energy*. We will also elaborate later on those concepts. To mention now that the symbol  $\Delta$  is both a visual reminder of the two different arrows of 'growth in space, inverse to the loss of information', and a tribute to one of the few predecessors of this work, in the formal arena – Wilson's renormalization mathematical apparatus, which finally realized of those discontinuities using a symbol  $\Lambda$ , for the energy scale under which a measurement of a *physical parameter* is performed. According to Wilson every scale of the Universe and the fields of space-time that define them have its energy cut-off  $\Lambda$ , *i.e.* the theory is no longer valid at energies higher than  $\Lambda$ , and all degrees of freedom above the scale  $\Lambda$  are to be omitted. But  $\Lambda$  is *related to a size of space*. For example, the cut-off could be the inverse of the atomic spacing in a condensed matter system, and in elementary particle physics it could be associated with the fundamental "graininess" of spacetime caused by quantum fluctuations in gravity. The failure to remove the cut-off  $\Lambda$  from calculations in such a theory merely indicates that new physical phenomena appear at scales above  $\Lambda$ , where a new theory is necessary. As today only with the use of Wilson's renormalization, which simply eliminates absolute zeros and infinities outside the scaling of space-time of a given plane, quantum physics makes sense.

Why we bring this fact so early on the paper is for you in case you are a 'pro' of physics, to understand the purpose of this and other papers – 5D is a huge advance on philosophy of science with applications to all scientific disciplines; but it does NOT attempt so much to expand the formalism of each science in its gathering of data and casting on the different jargons of those sciences, but *to explain the whys of facts found by sciences and correct the obvious errors, hidden by a lack of a larger perspective on the forest*.

This realization – that 5D is the why of Wilson's renormalization because planes of space-time are discontinuous; is the why of Lorentz Transformations, negative  $\beta$  temperature; the need to cut-off infinities.

But soon we shall see *it applies to the need to cut-off the infinities of the big-bang to make sense of the Universe. That's an error of physics, the main theme of this paper – how to put forward a better cosmology of the Universe. We shall still write another paper for all other themes of physics and scales, where corrections are not so necessary as in cosmology, with the exception of the single time arrow of entropy*.

*What will happen always in a given science look through the optics of 5D is that its errors are silly, from a reasoning point of view, which says more about the mind's structure of human 'believers' than its intelligence*.

But the biggest problem we will always face with physics is its philosophy of science, which should be none... It is not his job, but is 'constructivism' – the scales of physics matter more than the others – they don't, and mathematical creationism; mathematics, the language mirrors determines reality, not as it is the other way around, space, time and scale properties *determine mathematical equations, which are pure information, hence inflationary according to the properties of 'mental spatial information'*. *Let's then deal with space and time first*.

## PART I. 5D SPACE-TIME SUPCERGANISMS.

### LEIBNIZ V. NEWTON: GENERATIONAL SPACE-TIME

"According to their [Newton and his followers] doctrine, God Almighty wants to wind up his watch from time to time: otherwise it would cease to move. He had not, it seems, sufficient foresight to make it a perpetual motion. Nay, the machine of God's making, so imperfect, according to these gentlemen; that he is obliged to clean it now and then by an extraordinary concourse, and even to mend it, as clockmaker mends his work.' *Leibniz-Clarke Correspondence on the absurdity of mechanical models of the Universe*

**ABSTRACT.** The immediate consequence of the existence of an internal fifth dimension of space-time, made of all other planes=scales of spacetime of a being, its parts and wholes, which store the information of a system, is the obvious fact that if we ARE made of planes=scales of space and temporal energy.

We ARE the vital space we occupy and the time flow of existence we live between birth and extinction. It is the obvious, simple answer to 2 questions that have puzzled scientists for eons. Where is space and time? And, why the main science of space, geometry->Mathematics and of time, Logic, are obeyed by all systems and entities of Nature. Now we have the proper answer foreseen by Leibniz and Einstein: We are broken fractal species of space and time, whose mathematical and logic laws all vital space-time organisms follow.

#### The underlying question of time&space: Absolute or Relational, Generational Space-Time?

The fundamental question physicists wondered for centuries regarding the nature of space and time unfortunately was resolved as usual in favor of the simpler view: it is space and time an absolute abstract background of the Universe (Mr. Newton's view) or are we made of 'vital space' that lasts a time duration, so we are generated by the bio-topo-logic properties of scalar space and cyclical time? This is the choice of 5D 'stiences'. And its simpler version was called relational spacetime, sponsored by Mr. Leibniz.

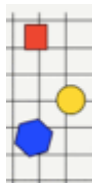
A realist interpretation of the world we live in, which has never shown in any scale of reality such 'background' - ultimately a mathematical graph used in abstract by human scientists - considers that we ARE the vital space we occupy with our cells, and we LIVE a cyclic time duration between birth and extinction. So *we are* scalar space and cyclical temporal energy. And must evolve our concepts of both parameters, to extract the properties of existential beings from them.

The argument thus reached its height in the beginning of science in the correspondence between **Newton**, the proposer of the absolute Cartesian graph of space-time drawn by God (his body in his own words) vs. **Leibniz** who rightly considered absolute space and time an abstraction, and so he coined the concept of relational space -merely the adjacent pegging of similar forms in simultaneous space and relational time - the sequence of events which we relate causally with reason.

In Newton's cosmos, space and time provide a fixed, immutable and eternal background, through which particles move. Space and time are the stage of intersecting lines sketched in the illustration. Fact is this 'mathematical artifact' made with pen and paper by earlier physicists, called the Cartesian graph, useful to measure 'translation in space' is no where to be seen in reality. Unfortunately as time went by the graph became somehow 'real' as scientists' felt the 'mathematical language' created reality.

It meant also the invention of an absolute 'continuous space' and a single 'lineal time' that extends to infinity contradicting the obvious fact that all 'spaces' are broken, divided by membranes, and all beings have a finite time duration. Further on, as we kept exploring smaller scales of reality, we never found the drawings of God, not even a solid still substance, but always 'motions' tracing closed time-space cycles; since even particles turned to be also 'vortices of time-space motions'.

So the true, sound experimental and logic theory was Leibniz's who rightly considered absolute space and time an abstraction, and so he coined the concept of relational space -merely the adjacent pegging of similar forms in simultaneous space and relational time - the sequence of events which we relate causally with reason origin of the



"The ultimate reason of things must lie in a necessary substance, and this is what we call God."

Gottfried Leibniz

'Scalar space-time' model of 5D in which are the space we occupy and the time we last – as in the graph where there is no longer abstract background lines.

This realist concept was NOT adopted by physicists despite its sheer evidence. *Unfortunately Physicists sided with Newton not with Leibniz on the question of what is space and time - an abstract background put by God or the substance of which we are all made; and so the conceptual jump would not happen.*

if space is what objects occupy the distance between the red square vital space and yellow circle must be something. Horror vacuum comes then into place: indeed the Universe must be scalar. There must be very small parts between them, which we do not see. And that is what we have proved with microscopes - *as we probe smaller distances forms with motion, spaces with time-motions appear and there it seems no limit to the fractal scales of the Universe.*

*It is the fifth dimension of space-times; the sum of all those 'planes of reality' includes within it all other dimensions.*

Next, to explain all this properly came Einstein. One of the fundamental discoveries of Einstein is that in our universe, there is indeed no fixed space-time background. In Einstein's theory of general relativity, which replaces Newton's theory of mechanics and the gravitational force, the geometry of spacetime is not fixed. Instead it is an evolving, dynamical quantity – a topology; and it is the substance of which reality is. So we are topological beings, geometries of space with motions of temporal energy.

What Newton called absolute space-time is not: Space is the sum of all discontinuous vital spaces occupied by different beings:  $\sum s=S$  Lineal time, T the sum of all the finite life-death cycles of all beings  $T=\sum t$ .

"Behind it all is surely an idea so simple, so beautiful, that when we grasp it - in a decade, a century, or a millennium - we will all say to each other, how could it have been otherwise..."  
- John A. Wheeler

*Since space and time do exist and so if they are not in the background we 'are' vital space and cyclic temporal energy.* The simple idea behind the structure of the fractal Universe is then to consider time=change=motion and Topologic, formal space=extension the 2 elements of which all beings are made.

Wheeler said 'Space-time tells matter how to move; matter tells spacetime how to curve'. More precisely *Spacetime is geometry in motion*. Time is change, the perception of change moves time; time is motion; space is its opposite, stillness, form, the information of temporal energy. And so it is all about 2 parameters: time=motion and space=form.

Look around you, all what you see are 'space-forms' with 'time-motion'. We are all space-time, forms in motion, 'in-form-motion', 'information', forms in action, play with the words of what you are.

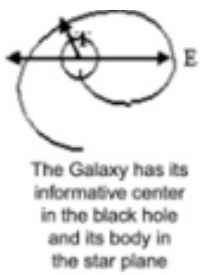
### **RECAP. We are made of 5 Dimensions of space and time**

Leibniz proposed a Universe of relative space-time beings where 'vacuum' did not exist, but reality was a nested chain of 'fractal' (to use modern terminologies) entities, as 'each point' hold a world in itself. Hence an organic Universe in which parts and wholes co-existed together to form those 'chains of beings'; without the intercourse of a God; as organicism was 'a sufficient reason'.

Newton, a biblical pious believer, considered a single absolute space, the 'plenum-body of god', or void on which entities travelled through with a single clock-time for all of them, set by God. This error is at the heart of our concepts of time and space, which are basically born of mathematical creationism, by expanding a pen and paper graph invented by Descartes to measure locomotions over which it traced those measures to the Universe itself. And so Descartes Spacetime graph became the graph of the whole Universe.

We must evolve our concepts of space and time to extract the properties of 'existential beings' from them.

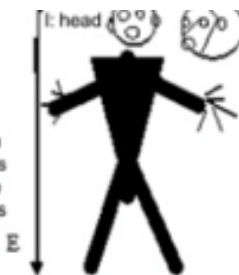
It is a big upgrade in our understanding of the logic structures of the Universe, as a r=evolution in our concepts of time and space comes only once every century, the last 2, Einstein's general relativity and Darwin's study of the evolution of form, did indeed change our view of the Universe, and took a long time to be accepted. So I ask the reader to 'suspend' his judgment, as I know he must think all this comes out of the hat of the researcher but it does not. It is the result of decades of looking NOT so much to humind's traditions but to the entangled experienced reality around us in all its forms of time and spatial information.



The Galaxy has its informative center in the black hole and its body in the star plane



Animals and plants have different energy/information directions, since plants obtain energy from the sun and animals obtain information. While plants get their information from the floor, from where animals get the energy to move. Thus the brain of plants is in its fractal roots



### SPACE: VITAL, TERNARY, ORGANIC TOPOLOGY

“Henceforth *space* by itself, and *time* by itself, are doomed to fade away into mere *shadows*,

and only a kind of union of the two will preserve an independent reality. Hermann *Minkowski*

This said the devil is in the details. So the next question is how many *types of vital space, we are made of. And the answer provided by topology which studies geometric forms with spatial dimension and time motions is only 3; which perform the 3 organic functions of all systems of vital space-time of which we are all made: A 4 or 5D Universe has only 3 'topological varieties' each one best suited to perform one the 3 organic vital functions of any physic or biologic system –gauging information (1D spheres, the topology that stores more information in lesser space, hence used in all particles and heads in the height dimension), lineal or cylindrical forms that move the system (2D, the shortest distance between two points, hence used as fields or limbs in the length dimension) and hyperbolic body-waves, a mixture of the other two topologies that reproduces the system and stores its energy in the width dimension (3D); which are similar to the 3 ‘conserved quantities’ of physics, angular, lineal momentum and energy, but not quite... as it is impossible to translate the ‘game of existence’, into the limited understanding and terminology humans use to describe it, plagued with conceptual errors that limits our use of the correspondence principle. For that reason, after much time wasted in attempting translations we start from scratch with the concepts of TT-Ts-St-SS and ST dimotions and its topological, qualitative and organic translation. And only in the papers that deal with mathematical physics we shall attempt the more quantitative description*

So we define the ‘Fractal Generator of Vital space-time topologies for all systems of Nature:

$$\Gamma: |-\$t(\text{limbs-fields})<\emptyset\text{-Si=Te-Body-waves}>O-\$d \text{ (particle-heads)}.$$

#### The easiest human equivalence: Temporal Energy and Spatial Information.

Human closest translation of the duality of primary elements was in the classic age of verbal thought, Asian philosophies of yin=in/form/ation=space=visnu and yang=entropic energy=time=shiva, and in the age of digital thought, motion=time has become synonymous of entropic energy, while mental simultaneous space is akin to the concept of in/form/ation; since our concepts of space and time have been restricted enormously by virtue of the Galilean equation of speed,  $v=s/t$  which became as physicists substituted philosophers of science in the summit of scientific thought, due to its power as machines and weapons makers, the ‘only equation of time’, when in fact was just a measure of speed with very limited space and time parameters.

As Einstein merely added –  $c$  term to that equation nothing changed despite the hype surrounding his work. So we shall often use the terms temporal energy or entropic energy for time=motion and spatial information or spatial form, for spatial information. As time and space are synonymous of motion and form they do have multiple meanings. So there are 5 types of time change=motion parallel to 5 types of space= form. Yet in fact as we have seen space and time are always mixed together, since human still mental one dimensional space is a simplification and definitely *a single time arrow of entropic energy or absolute motion is an extraordinary simplification of the richness of motions of temporal energy.* Energy in that sense with its multiple variations of meaning is much closer. Specifically entropic energy; that is, a motion which is internal and external to the being or ‘TT’, pure motion appears in the equations,  $E=Mc^2 (\Delta+1) = knT (\Delta^0)=hf(\Delta-1)$  that transfer temporal motion through scales of the fifth dimension. This is the entropic arrow of time and disorder akin to death which physicists consider the single arrow of temporal energy. My advice, because of so much messy and simplified understanding of time in physics is really to take with some irony their work on philosophy of science, though as their equations have their own life and self-consistency those are ‘real’ and must be addressed with much more rigor, as we shall do in the papers on mathematical physics. But for concepts of time and space useful to all scales and sciences we shall use temporal entropic energy and spatial in/form/ation. Energy, being the jack of all trades, in messy human philosophy of science is also used for Si=Te,



balanced 'work' which in fact is both space and time, energy and information, as it imprints form into motion, reproducing cyclical patterns of science. So it is better to define ST as reproductive work.

It is then obvious that the fundamental law of science, the law of conservation of energy, becomes the law of conservation and immortality of time-motions, which can be expressed as follows:

*'All is time=motion=change in perpetual trans-form-ation in one of the 5 Dimotions of time-space:  $S \Leftrightarrow T$ '*

Thus the purpose of science in each sub-discipline, which studies one of the scales of the fifth dimension in to study how one transforms into the other.

As we unify them all under the common language of Generational space-time we shall make a lot of homologic disquisitions on the jargons of each science. Consider the case of the previous equation largely the fundamental one of mathematical physics. How do physics measure information, St; as opposed to energy, Ts; different from entropic energy, TT? We can't overextend in the general model, but it is obvious that the law is expressed as a function of momentum, the derivative of physical energy, whereas a derivative is a 'quanta of temporal energy', and position, a function of form, expressed as potential energy. So in this particular case St-form is potential energy, Ts is kinetic energy; and at the finitesimal scale, momentum.

*Does it mean we are going to change all the equations and terminology of science?* Not, so. It would certainly much better for mankind if Newton had gone to pasture and Leibniz arrived to London with his king putting the record straight from the beginning. But at this moment of history if we cannot even change the routine of calling wrongly the electron a negative charge (as it is the dominant positive sink of electric forces), we will become extinct much earlier than we adopt the jargon of  $\Delta st$  for all species. This I know. But my purpose is simply 'amore gratis', 'for the sake of art', to leave the template model of a much more advanced understanding of the entanglement of reality and the structure of the fractal organic, Universe.

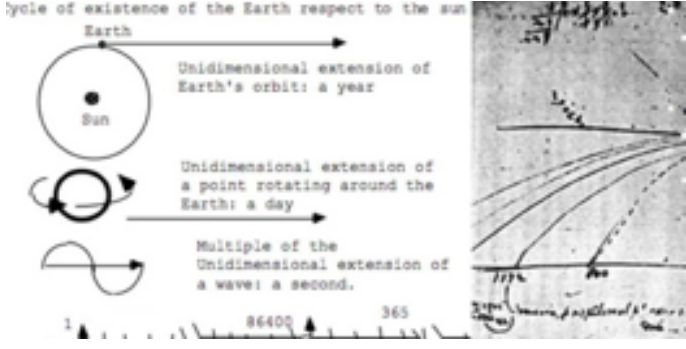
*Spatial information and temporal energy thus adopt multiple jargons even if ultimately reduce to the 3 topological varieties of Ts-limbs/fields of entropic temporal energy=motion, St-heads/particles of informative space, and TS-working body waves that combine both.*

*A question of importance for metaphysics is the conservation of spatial information, as opposed to the obvious conservation of all the modes of time-energy (once we correct the entropic big-bang, it will be obvious that the immortal Universe indeed conserves its dimotions). The answer lays in the dualities of discontinuous information vs. continuous time motion, or at least the perception of sequential flows of dimotion as a continuous river of temporal energy. Information is however always discontinuous, so the preservation of information requires its reproduction in a discontinuous region of time-space, and in different scales.*

Information is preserved but NOT the ego that converts motion into temporal energy. And this leads to the ultimate metaphysical question – are we then repeated in parallel fractal worlds. And the answer is positive, as the number of worlds is much larger than the possible combinations of information of the 3 topologies of a 5D Universe. And so then a question is left for the reader to wonder, and perhaps one of a million to answer if he becomes proficient in 5D metaphysics: is the mind a flow of time 'entangled' across space and time, to be reborn in a continuous sense of existjence in a parallel being born in other region of reality?

But how it happens that time becomes energy and space information, intermingled in infinite fractal beings, fighting for the conservation of its time existjence? It is a process that requires a huge conceptual upgrading of the humind, distorted for so long by the mere expression of  $Si \Leftrightarrow Te$  interactions in a single mathematical language, with little understanding in our verbal, natural 'form of thought', of what was the meaning of it all.

We shall thus reserve for our papers on the 'algebra of time' the translation of 'mathematical physics' & its formulae... and intensify in this paper the understanding of time in pure topo-logical, spatial and causal terms. But use constantly as sinomynous T&E, S&I, and study its entanglements into 'dimotions' of time-space.



**CONSERVATION OF ENERGY ≈ CYCLIC TIME**

'I am the only physicist that think there are  $\infty$  time clocks .Leibniz is right. There are infinite time clocks in the Universe, but if so we have to restart science from its foundations'. *Einstein*, on what we do here.

In the immortal universe time-motion is conserved This means time *time is cyclical, repetitive, as iterations are the only form to conserve time in a 'present' that doesn't seem to change. It is equivalent to the principle of conservation of energy. Because time is cyclical, it does break Newton's absolute time into infinite cycles, which make its motions equivalent to those of physical conserved energy cycles, in which work doesn't happen.*

**The causal repetitive laws of 'stiences'**

A Universe of  $\infty$  time clocks of different size and speed differs from its human description with a single mechanical clock-time to which all time clocks of the universe are equalized, elongated into a lineal 'second-minute-hour-day-year' system of equalized time clocks (of light waves, mechanical clocks, earth's astronomical clocks). As Galilean physics, born of ballistics, simplified the nature of cycles of time-space into lineal durations, to measure best the locomotions of cannonballs:

Time is cyclical, all clocks of time and laws of science are based in the cyclical patterns of nature. But physicists developed ballistics and denied the truth that we can know the future because it will repeat the causality of the past, and we can change it by changing that causality, in History by repressing the lethal memes of the tree of metal and enhance the welfare memes that make us survive.

Lineal and cyclical time render the same functions as one is the inverse of the other, measured by frequency,  $T=1/f$ , but the philosophical implications of cyclical time, are enormous, as we regain the in-form-ation provided by those cycles, *origin of the laws of science, which would not exist if there were not cyclical patterns; including the cycles of history and economics. The most important of them being, the fact that a time cycle breaks reality (1<sup>st</sup> knot theorem) in an outer and inner region, creating a membrane that encloses a vital space, the 'substance of which we are all made'.*

What physicists call 'time' is only one of the 5 Dimotions of reality, locomotion, translation=change of position in space; not all the times of the Universe. Its power in our technological civilizations as makers of machines of TT-entropic destructive motion (weapons) or transport machines of Ts-locomotion, their work has 'hidden' all other analysis of timespace dimotions, such as those concerning deep time scales (geological motions of Earth's superorganism), biological information (evolutionary motions), Historic cycles (censored by power as they are provoked by the wrong evolution of the 'bad fruits=weapons' of the tree of science, which gives power to people-castes of history, etc.) Thus by the 'correspondence principle, physical time, expressed by Galileo as  $V=s/t$  is the 'limit' of a theory of time-space dimotions reduced to locomotions.

**The 3 scales of temporal energy.**

Why there are 2 forms of time, the long lineal Time and the 'short' frequency steps we integrate into the larger whole? Precisely because *there are 2 boundary  $\pm j$  scales of 5D reality whose metric,  $SxT=\Delta \pm j$  defines larger space systems as having slower time cycles. So we can always consider the frequency of time the  $\Delta-j$  'quanta of time' or 'finitesimal derivative' of the larger whole represented with the concept of lineal time; as in the classic formula,  $S=f(t) \lambda(s)$ . The whole Space can be measured,  $Vt=S$  with lineal time as a single unit, or it can be measured as a sum of frequency steps, with more detail.*

Yet since 2 limits always create an interval, and all supørganisms of time-space co-exist in 3 scales, that of its inner world, that of its 'membrain-mind' and that of its outer world, there will be often a 3<sup>rd</sup> element in between two measure time, *specific for each supørganism and sub-species sandwiched between the 'lower' time quanta and the larger lineal time of the whole. So for species within the galaxy, if we take the lower time quanta, h, and the larger*

time rod of measure, the speed of light, in between we shall find all kind of supœrganisms that cannot go faster than light or process information in quanta smaller than an h-planckton with its specific time quanta, to synchronize its 3 vital parts, which in the human case is the second 'beat' of the heart, length of the thought, glimpse of the eye, measure of a dual stœp, (and ½ second of it is indeed the musical beat that we find more harmonious to synchronize our dance.

Synchronicities of time between the 3 relative speeds in which a being co-exists become then one of the most fruitful fields of study, as the 'persistence' of superorganisms in space is due to the symbiosis between its 3 scales of T.œs (time-space supœrganisms) synchronized with them.

**The principle of conservation of time** *has infinite variations. And we can deduce all laws of science of its existence, as ultimately what the other 'element' of reality, points-minds of fractal space try to do is to stop time, as an strategy to conserve it.* As we consider a clear equivalence in physics between cyclical time and energy, the principle carries into two principles from where almost all the equations of physics can be derived. The principle of least time (origin of Lagrangian and Hamiltonian equations), according to which a particle will trace a motion that minimizes its time expenditure. And the principle of lesser energy, according to which any particle or physical system will seek its ground state of minimal energy.

Latter we shall see this principle of standing minimal points have its counterpoint In the second fundamental strategy of all systems, to conserve its time, or state of present which is the iterative reproduction of the system, which implies to absorb energy=time from other beings, to imprint it, once it is reduce to its formless state of entropic motion, with its own information. Thus besides the standing points of minimal energy that conserve time, which are the origin of seeds and still minds of information, of potential wells, and degenerate states of particles, of Lagrangians and Hamiltonians (where both minimal and maximal standing points happen) there is the principle of maximal reproduction, origin of the evolutionary struggle for existence.

The great advantage of understanding those principles in terms of its fundamental substances time=motion and its state of maximal conservation, space=stillness, is that they can be expressed in any language of thought, not only mathematics, and apply to all stiences, not only physics, which frees philosophy of science of the 'gross' errors of western human physicists that deformed time and reduced it to entropy and lineal motion, and its  $v=s/t$  equation, due to the worldly profession of its founding father, Galileo, artillery master of the Arsenal of Venice. So today when we study physics we go from simple exercises of ballistics, calculating the best angle of a cannonball to the entropic big-bang. Yet as physicists do not recognize those historic errors they have carried such simplified views of time and space into all sciences, a fact we shall not cease to repeat because it at the heart of our lack of understanding of reality in its ultimate principles.

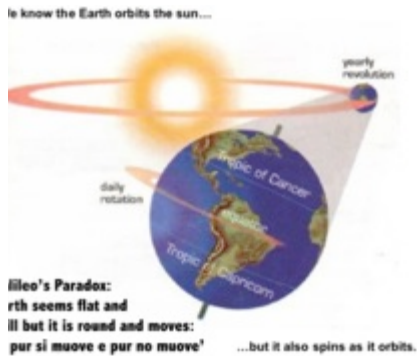
A more evolved civilization would start in philosophy of science and the principle of conservation of time and space, and its structure in 5D organic scales and derive from them the fundamental laws of every other discipline. As we do in those papers.

This said we shall continue translating and correcting the original errors of physics regarding time and space, as they weight heavily on all our disciplines. So after resolving the error of Newton and side with Leibniz, which opened up the understanding of vital topology and its dimensions; and solving the error of lineal inertia and defining the real thing, cyclical time, and its equivalence with energy; we shall solve the 3<sup>rd</sup> earlier error of physics, this time regarding the nature of Space and time together and how they convert into each other ad eternal, origin of relativity and the paradox of Galileo – the fact we don't see the Earth moving.

## 5 D METRICS AND RELATIVITY OF MOTION

"A human being is part of the whole, called by us 'Universe'; a part limited in time and spatial information. He experiences himself, his thoughts and feelings as something separated from the rest -- a kind of optical delusion of his consciousness." *Einstein*, on the entangled forest man cannot see - and its 5 elements, 'space', 'time', 'scales' of parts and wholes, 'entropic limits', and 'languages of the mind'

### Galilean Paradox: $S \leftrightarrow T$ : Relativity of space Dimensions=Forms=Motion in time: 5 Universal Dimotions



Galileo's time and space Principle of Relativity is the fundamental conceptual thought behind the relationship between time=motion and space=form and how one can be converted into another: All what exists is made of space=form and time=motion. And yet physicists know that we cannot distinguish motion from form. That any being in motion from its point of view seems to be still and all other things moving around it. *This is the principle of Relativity of motion.*

Physicists then without much thought about that fascinating duality, went on to use mathematics to calculate the relative motion of each entity of reality respect to other system, which seems static from both points of view. This is called Galilean relativity, latter refined by Einstein's relativity, and essentially is concerned with the mathematical calculus of what we shall call the 2nd Dimotion of time=change, locomotion. Fine, but we are more interested on the duality of space=form and motion=time and its entangled relationships –the reasons why we do NOT see together motion and form, even if all systems have both.

The conclusion is then rather obvious: one of the two parameters of reality is 'hidden' to perception; we either see motion or form, 'waves or particles' (quantum complementarity), distances and lines or points in motion (as in the night when fast cars in a picture appear as lines). So *physicists calculate only one when in fact we must assess the existence of 2; and since we cannot distinguish them, logically we must equal them. 'Form=motion-function; space=time; Si=Te'.*

Relativity then becomes a duality,  $S_i = T_e$ , which is at the heart of every law of the Universe. Whereas the primary element, the ultimate substance is time=motion. As space is a Maya of the senses – a slice of time motion. Form is what a 'still mind', makes of that motion to 'perceive', information, forms-in-action.

Since we see Earth still and flat but it is round and moving. Galileo's profession was ballistics - the study of cannonballs motion. So he chose ONLY motion and lost the chance to start physics with a complex philosophical understanding of its  $S_i = T_e$  dual Principle of relativity, which Poincare defined latter clearly when he said that 'we cannot distinguish motion from stillness'. An example is quantum/relativity duality. In detail quantum space has 'dark energy' because it has expansive motion that extends into a plane of space, but when seen at larger scales without detail its entropic motion seems static space - a dual area of scattering length and width. So in the galaxy we see either dark energy motion or expanding space:  $T=S$ . A motion of time is equivalent to a dimension of space: Distance and motion cannot be distinguished so they must be taken as two side of the same being, a space=time Dimotion (ab. Dimensional Motion):

$$S = T; \text{ Dimension-Distance} = \text{Time-motion} = ST \text{ Dimotion}$$

Earth moves in time, but we see it as a still form in space because reality is a constant game of  $\infty$  motions, but the mind focus those motions and measures them at still distances. For huminds, motion is relative to our systems of measure and perception, which are light-based; hence a fixed c-rod speed/ distance. Reason why Einstein's relativity postulates a maximal T:c-speed, measured as if observer and observable were still to each other (Constant S); which at our scale we correct with Lorentz Transformations.

But *physicists just substitutes the Earth's still distances for motions, and it took another 300 years for Einstein to realize* the relativity of motion and its measure made essentially time and space, motion and form two sides of the same coin. Still this realization was not explored philosophically and so it gave birth to a series of ill-understood dualities between 'states of measure and form' (particles, head gauging form, in-form-ation) and 'states of motion' (wave states).

It is then essential to grasp that motion and form co-exist as 2 different states depending on 5D scale and detail: Motions are perceived by minds that stop motion into form, into information, as distances. So if we see slow motion in the night, a car's headlight seems a long distance line 'still' picture. But this means also that the 3 'Euclidean still dimensions' must have motion; they are 'bidimensional ST-holographic, topologic dimotions'. So we have 3 Space + 1 Time + 1 5<sup>th</sup> dimension of scales = 5 Dimensional motions. None of them is *a Dimension of pure spatial form or a pure time motion but a combination of both. Even if mentally we tend to reduce motion and focus on forms, all has motion=time, and form =space: this is the meaning of 'spacetime', the messing of both into 5 dimotions, the fundamental element of all realities.*

Relativity states 'we cannot distinguish motion=time from position=space'. So all what exists is a composite of both, undistinguishable  $S_i=T_e$ , 5 'Dimensional motions' (Ab. Dimotions), broken in infinite fractal, vital time space organisms, composed of topological Dimotions: height=information; length=locomotion; width=reproduction; form=social evolution of parts into wholes & entropy=dissolution of a whole into its parts in a lower scale of the fifth *dimension* (term we keep for the whole range of scales of the Universe); whose study is both mathematical, the main science *that studies how those 5 Dimotions entangle in simultaneous Space*, connected to each other topological adjacent parts, which create superorganism, and Logic; the main science of time that observes how those pentalogic, entangled superorganisms move and evolve, change in sequential relational time, living a worldcycle of life and death.

As all is time&space, the 2 experimental primary mirror-sciences of time&space become the most important to extract the Disomorphic=equal laws of those 5 Dimotions that all systems have in common. Since *while those Dimotions are broken, in vital organisms, separated by cyclical time membranes, they are the same.*



*In the graph Galilean relativity was ill understood, as the true question about time-change is why 'the mind sees space as a still, when in detail is made of smaller self-similar quanta, in motion. The paradox defines mental spaces as still simplified views of the more complex whole. The 3 logic paradoxes of space topology (closed in-*

*form-ative curved-O vs. |-open, free entropic lineal forms), time-motion (stillness vs. motion) and Δ-scale, (continuous whole vs. discrete forms; single scale vs. multiple one)s, are essential to the perception of a simplified 'spatial mind universe' in a single flat still plane vs. the full, more detailed complex picture in time, of a curved, discrete and moving Universe. Those paradoxes resume the 5 elements of reality, Space=form, time=motion, scales and the mind that measures them, within its own entropic limits.*

### **5d metrics expresses the conservation of time.**

*The paradoxes of Relativity, discontinuity, parts and wholes, scales are all related to the reductionist nature of minds that bias reality. Minds reduce dimensions to the relevant ones, eliminating all dark spaces: continuity is the result. Of all formal languages that map out reality 2 are paramount, Time logic & mathematics of Scalar Spatial information.*

A 5D Metric function,  $S(0\text{-Mind}) \times T(\infty\text{-universe}) = \text{constant world}$  is the function of all mind languages who only perceive from its self-centered point its language mirror confused with the whole Universe (Ego paradox, basis of psychology). Entropic huminds reduce the multiple clocks of time and vital spaces of reality to the single human clock and spatial scale, rejecting the organic properties of other Universal systems.

The main laws of 5D are the metric functions of the scalar Universe, which relate the spatial size and speed of temporal clocks of all scales of Nature. Both parameters are inverted: when systems grow in size the speed of its clocks, its 'time cycles', diminish proportionally, both in biological and physical systems. And vice versa.

Smaller clocks tick faster and information processing carried by the frequency of those cycles accelerates, as it happens in chips, particles or life metabolism. So we write:  $S \times T = C$ .

The mind thus starts it all with its linguistic 'still mapping' stopping its world in a locked 'crystal image', measure of its self. But even perception is social, linguistic. The Universe can only be explained if 'perception' exists within the language, as when you think words, you sense words, when your eye sees light and maps into an electronic mapping you are seeing. And when an atom maps a geometric image in its 'locked' 'stopped' spin, it must perceive that geometry as information.

Physicists made the Galileo's paradox, the cornerstone of their theory of measure, but they failed to study the deep implications it has for every aspect of the structure of the Universe, from the duality between spatial mental, linguistic forms and physical motions; to the balances achieved by the similarity of both space and time, which becomes the fundamental 'function of present'  $S_i = T_e$ , and hence with the metric function of scales,  $\delta \times \delta = K$ , the two essential functions to formalize single planes  $S_i = T_e$ , and multiple scales of spacetime. Yet as  $S_i = T_e$  maximizes  $S \times T = K$  ( $5 \times 5 > 6 \times 4$ ). We unify both in 1 function:

**Max.  $S \times T = C$** , which defines for each fractal vital space-time organism its Function of existence, as all species will try to maximize its motion-entropy-time for its field-limbs, its information-spatial states for its particle-heads, whose product will give us its vital reproductive energy. Moreover the function has an immediate biologic meaning, because as we are made topologically of 'fields-limbs' of lineal space with motion provided by the energy we absorb to also reproduce our bodies-waves, and the information we need to linguistically guide our motions with particle-heads, the very essence of survival is to increase our  $S$ =position, mental forms of space and  $T$ =entropic motions of time (whereas time=motion & space=form are the two limiting Dimotions with 'energy=reproduction,  $s=t$ , locomotion,  $sT$  and information,  $St$ , are the intermediate 3 dimotions).

The fifth dimension is made of the 'different co-existing scales', which from the simplest forces through particles, atoms, molecules, matter, organisms, super organisms, planetary systems and galaxies, create an 'organic network structure', which amazing enough since it was discovered at the beginning of science with telescope and microscopes, was not formalized till I introduce its metric function in the milieu of systems sciences, as a single lineal time motion is a dogma physicists don't dare to challenge. *Yet science cannot advance in its fundamental principles unless the formalism of the fifth dimension is accepted and used to fully understand the cyclical, repetitive patterns=laws of science of each discipline that studies a scale of the fifth dimension and its species.*

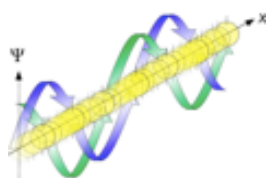
### **Reproduction of form in 5D and its essential mathematical tool: calculus.**

The Universe is a fractal that reproduces information, forms-in-action, forms of space with motions in time. This is the essence of it all. *But space is a maya of the senses, the synchronous view of a series of cycles of time motions, knotted in the simultaneous perception of an observer; what physicists call a 'frame of reference'.*

*Thus time=change is the fundamental element of reality, and this makes Algebra of time-change, specifically calculus perhaps the most important experimental science of time, besides logic, which we have upgraded to existential algebra, which explores the vital, organic whys of those changes.*

*It is the Galilean Paradox:  $S=T$ . We cannot distinguish time from form. In as much as each frame of reference or mind locks in a knot-mirror of the motions of the Universe from its point of view. So each point of space is a perceiver relative field of motions, which from its perspective knot as forces 'attracted' by its frame of reference. Yet if we cannot distinguish motion from form each point is entangled to those motions and is made of motion and form, of the particle and wave states.*

Locomotion as reproduction of form solves the Paradoxes of Zeno and the meaning of discontinuity. As motion is reproduction of information, of form, since particles are knots of perception of form, fractal points, monads, that move by reproducing in a lower 5D plane, as  $\Delta-1$  waves, its information, as forms-in-action.



So all forms of change can be reduced to the ultimate function of existence, reproduction, a back and forth travel through 2 scales of the fifth dimension, as a form becomes a seed that reproduces, evolves socially and forms its whole again. *The extraordinary capacity of Calculus, which extracts at  $\Delta-1$  level a 'finitesimal' (Leibniz's  $1/n$  definition of infonitesimal as a minimal part of a whole and ALSO, by virtue of  $S=T$ , a minimal 'curvature' of a time cycle, which is then integrated for a time duration of the event, either locomotion, or volume of population in space or  $S=T$  continuous=smooth change in time happens precisely because CALCULUS perfectly mimics the process of change and reproduction of form between  $\Delta^0$  and  $\Delta-1$  scale which is the basis of all time-change also in physics.* Change thus is change reproduced in a lower plane as a seed that evolves into a whole.

And all this is what actually calculus calculates: It finds a finitesimal part of reality and then integrates it as a sum, whereas the function of existence of the form displaces and reproduces its orthogonal parameters of form and motion. So physical forms are constantly reproducing, 'calculating' and the equivalence between the tools of calculus as mirror of the process of reproductive locomotion become crystal clear.

It is then not so much in physics but in calculus where we find the strongest model of the laws of 5D and locomotion as a reproductive process of form, even if the experimental proofs are scattered all over physics. Indeed, the entire world of quantum physics can only make sense if we consider that particles MOVE AS WAVES and gauge information as stop particles. Because waves can be transparent to each other but particles collide. A simple proof: the atomic nucleus is so small compared to its particles that if they wouldn't move as waves, transparent to each other, they would be always colliding and the nucleus would never remain stable. In fact, when we get pictures of those particles outside its shells, (electrons) they move in zig zag as they stop and change motion constantly. As usual physicists just make an axiomatic rule and subvert the law of causality converting the mathematical mirror derived of the fact in the cause of the fact – in this case they say this is due to the Pauli exclusion principle without providing *the mechanism for particles to avoid collision if moving.*

It follows that beings with more information, reproduce slowly and we can hardly see them moving. The limit of it being complex life superorganisms on Earth, whose reproduction takes 9 months. It happens 'inside' the reproductive mother, and it reproduces in the adjacent space after 'tearing' the topological knot of the umbilical chord. A similar very slow process of reproduction happens in physics with the weak interaction that reproduces a form with even more information evolving the mass of particles, so the range of the force is minimal and the new particle appears adjacent to the one that disappears, dying for the new hatched 'baby' to be born.

They are also essential to all the elements of calculus and mathematics at large and its *methods of solutions*; specially the inversion between finitesimal lineal steps (as a step between two points is NEVER curved) and the cyclical form of longer 'integral paths'. So lineal approximations are the essential tool of calculus and mathematics to resolve many equations.

What neither mathematicians nor physicists fully understand (though some inroads in abstract were made through the Noether's concepts of symmetry) is that each stœp of a method of solution is not 'gratuitous'; but must be grounded in a real property of the 5D  $\Delta ST$  symmetries and conservation laws of the Universe, which are not so many – hence the repetition of methods. Specifically, the aforementioned 3 paradoxes between  $\Delta+1$  curved closed worldcycles, sum of lineal steps, which gives birth to the most used method of lineal approximations; the equivalence between Space and time, in all Stœps of dimotions, which gives birth to the method of separation of variables on differential equations and more broadly allows to move around relative space and time parameters in equations joined by an operand of 'equivalence' ( $\approx$  not  $=$ ). And the 2 conservation laws of the Universe, conservation of those 'beats' of existence,  $S=T$  in relative present, eternal balance, justifying the equivalence operands. And conservation of the 'volume of space-time' of each plane of the Universe, by virtue of the 5D metric equation  $SxT=C$ , which justifies all the procedures regarding scales – solution of differential equations by separations of scales, renormalization procedures (Wilson), and harmonizes those scales allowing constant but balanced transfers of energy and information,  $St=Ts$ .

## EINSTEIN'S RELATIVITY

### **Correspondence Principle. 4D physics as a 5D limit reduces time to entropy and scales to a single plane.**

*The 5<sup>th</sup> dimension is also the key to resolve the pending questions of physical sciences. So, we shall respect the correspondence principle and translate the laws of relativity to 5D, to prove the veracity of both arrows of time, which are needed together to fully account for all the possible 'dimensional motions' (ab. dimotions) of the scalar space-time Universe. Since the 4D formalism is the 'limit' of 5D physics, when we 'discharge' times=changes of information reducing all the types of change=time of reality to translation in space (entropy and locomotion) and its mathematical formula,  $v=s/t$  in Galilean relativity,  $S^2=S^2(x,y,z)-(ct)^2$  in Einstein's Relativity. And when we 'compress' all the scalar planes of space-time of the fifth dimension into a single space-time plane continuum, discharging all its organic and sentient properties, which we shall soon show are a direct consequence of 5D metric functions.*

*So the reader who is impatient to compare both models can go to page 21 where we deal with Relativity.*

He must be warned though that the expansion of our understanding of space and time produced by the introduction of the second pole of internal change=time, evolution of form, information, classically studied only in biology to that of external change, translation in space, studied in physics, is so vast that despite the cult to our Baconian 'tribal idols' of science, our 'seers of time' (Augustine's definition of God), relativity physicists will seem to him, once he has suspended his beliefs long enough to digest with an open reason the basic laws of 5D children, making simple 'worldlines' on the sand with a single rudimentary stick – that of lineal temporal energy. Since indeed as Parmenides already proved, the one is a perfect sterile whole - a single time dimension cannot generate anything, but when we have two poles connected by the inverse properties of form=still space and time=motion, across multiple space of size=scale, *this entangled trinity will account for the whys of every event and form of the Universe in 'existence'.*

### **Its 5 Principles. Masses & Charges as scalar space-time vortices. Unification of forces.**

Time is what a clock measures'. 'Time curves space into mass.' *Einstein*

We apply the correspondence principle and prove that Einstein's previous paradigm on 4D space-time, based in the following 5 postulates/functions, is the theoretical limit of 5D in a single light spacetime plane:

- Relativity postulate that states we cannot distinguish motion=time from dimension=position=form=space, which in 5D we reduce to a simple formula,  $S \approx T$ ; we shall call the Paradox of Galileo (e pur si muove, e pur no muove) as he couldn't explain why the Earth moves but we perceive it in mental space as a still dimension.

- Denial of Newton's Absolute space-time; as he said 'Leibniz was right, but if so we have to start physics from its foundations' and 'I am the only physicist who believe there are  $\infty$  time speeds in the Universe', which we made explicit accepting Leibniz's relational concept of spacetime, precursor of generational space-time, resumed in a sentence: 'we are the scales of space we occupy and the cycles of time our existence lasts'.

- Constancy of light speed,  $c$  that in a 4D single background plane of light space-time corresponding to the galaxy holds naturally, as *light in a relational->Generational theory is the space-time of the galaxy*, which generates through its 'accelerated' vortices of space-time in a crescendo of ever more dense scales, photons, electrons, quarks, atoms, molecules, matter states, cosmic bodies and black holes. Yet when we add a 5<sup>th</sup> Dimension sum of all those scales,  $c$ -speed becomes the limit when we reduce all the potential scales of the Universe to light space-time and the particles generated by it. And so we define a second metric function for all scales:  $S_p$  (Space size)  $\times$   $T_f$  (cyclical time frequency) = Constant; meaning smaller scales of space hold faster rotating particles, (black holes beyond the event horizon, where there is no longer 'light') or when moving in lineal fashion can go faster than light speed in scales below light or outside galaxies, (Bohm's quantum potential of action at distance cause of entanglement, neutrinos outside galaxies.) As  $S_i = T_e$  maximizes  $S \times T$ , both



give the metric 5D function: Max.  $S \times T = C$ , local to each Time-space organism struggling to survive by Maximizing its St-in/form/ation & sT-energetic motion.

- The principle of equivalence between Acceleration and mass, which we consider a strong principle, as a rotary accelerated vortex of space-time is a mass in the cosmological scale (ab.  $\Delta+1$ ), a thermodynamic Eddie in the human scale ( $\Delta^0$ ) or a charge in the quantum scale (ab. $\Delta-1$ ) Thus the principle can be written with parameters of space and time frequency as a case of 5D metrics,  $S \times T = C$ ,  $V(t) \times R(s) = C$ , from vortices functions, to the 3D case,  $(M, C) = \omega^2 r^3 / U.C. (G, k)$  which defines both charges and masses as quantum and cosmic vortices of 2 different 5D scales, whose G and k, Universal constants of S(curvature - Einstein's formalism)= T(speed -: Newton's), in 5D metrics have the measured  $10^{39}$  difference of strength, solving the hierarchy problem. Since paradoxically, the smaller, faster rotating charge is more attractive than the larger slower galaxy. Further on, in 5D space time vortex metrics a proton shows to have a Schwarzschild Radius, showing the scalar similarity between galaxies, as 'atoms' of a hyper-universe and dark expansive energy, as  $\Upsilon$ -radiation between them.

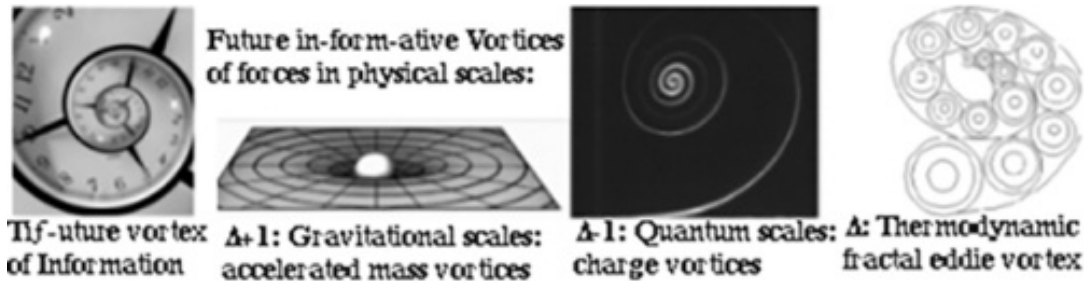
- Energy-mass,  $E(t) \leftrightarrow M(s)$  in Planck Units coils entropic lineal motion into collapsing matter,  $E \rightarrow M$ . As when the accelerated dark entropy between galaxies collapses into galactic mass, warping one-dimensional motion into 3D mass vortices (hence balancing the expansion of intergalactic space, 75% of dark entropy, into 25% of mass vortices, as  $3 \times 1D$  entropy becomes  $1 \times 3D$  masses; leaving the total volume of the fractal immortal Universe unchanged. While its inverse process is a scalar big-bang when a spatial space-time vortex, hold in its attractive position as an accelerated clock of time-space becomes entropic motion, uncoiling its form into lineal motion:  $M \rightarrow E$ , in any 5D scale of spacetime; from a particle's Beta Decay, through a Nova explosion, a galactic quasar, or perhaps a cosmic big-bang, a 'hyperbolic' theory of the whole, which we shall doesn't hold in 5D as it studies only the entropic expansion of intergalactic space, ignoring the balancing collapse of entropy into galactic masses, doesn't pass the epistemological laws of truth – known case, experimental evidence beyond local measures, correspondence principle with the known-known laws of physics (conservation of energy and momentum and baryon numbers), and we falsify in the paper on Cosmology, concerned with the building up of an epistemologic sound model of the fractal, organic, immortal 5D cosmos.

Thus we call the new 5D model Absolute Relativity, as it adds to the relativity of motion (Galileo, Einstein) and Time evolution (Darwin), the relativity of scales, with no preferential one, despite human 'ænthropic beliefs' in an anthropic Universe with us at the center, and only intelligent, informative species, with entropy as the only time arrow of everything else – which are just deformations of any mind's 'metric function':  $O$ -Infinitesimal mind  $\times \infty$  Universe = Still mind-mappings (World). We call that 'projection of humind's limits into the larger, more complex whole, the 'ego paradox': 'Every point of measure gauges reality from its distorted perspective as the largest, only intelligent center of the Universe, which it confuses with its still, infinitesimal mind-mapping'. A more sanguine word would be 'Egocy:Ego=idiocy' proper of all minds, which model reality with its shortcomings. In the human case the worldly profession of physicists, to make entropic weapons has heavily biased our view of the Universe.

**RECAP.** The metric function of balance and feed-back  $S \leftrightarrow T$ , between the spatial, informative mental pole and the reproductive, cyclical motions of Time becomes the basis of Relativity and all physical motions, establishing the fundamental 'beat' of all local space-time organisms of the Universe. The principle of correspondence consider the 4th Dimensional formalism the limit of 5D in a single 'space-time scale', equivalent to Galileo's formula,  $V=s/t$  which special relativity adapted to the 'contraction' (-ct) experimented when the speed of a system reaches the limit of our thermodynamic planes of space-time, on the border of the quantum/cosmological,  $\Delta \pm 3$  plane or light space-time continuum and General relativity adapted to the cosmological, gravitational  $\Delta \pm 4$  plane of the fifth dimension; which requires for a full understanding a more advanced knowledge of 5D metrics and Physics. So we shall return latter to those themes and also deal with them in detail in our papers on cosmology and quantum physics.

In the galaxy the same balance happens between the vortices of mass-time and the entropic time expansion of energetic vacuum spatial information. In terms of the 3 illogic dimotions of past-entropic time, future-informative time vortices, the intermediate state, combines both: What we call present time is the dynamic, feed-back repetition of reality which seems not to change because it repeats the same cycles. Physicists have reduced time to the arrow of entropy, born of its worldly profession of making weapons and transport machines - even to the point of ignoring in the cosmos the balancing imploding informative action of gravitation that collapses vacuum energy into mass, so they can maintain that the Universe is only expansive vacuum between galaxies (the so called big-bang theory).

**MERGING EQUIVALENCE PRINCIPLE AND 5D. UNIFICATION OF 5 FORCES AS GALATOM'S 5 DIMOTIONS**



*In the graph the translation of the  $3\pm j$  dimotions of spacetime, into topologies of physical systems, with steady state waves and angular momentum as a repetitive present and a relative past of lesser information and more entropy (lineal inertia) that expands space into decelerating big-bangs, vs. an accelerated force, with one more dimension of time=future, as a pole of attractive forces, which change parameter of scale.*

So we define charges and masses as accelerated 4D time-space vortices in the galaxy's 2 limiting  $\Delta^{\pm 1}$  scales.

All what exists is a motion in time. Space forms are still pictures of those motions - a Maya of the senses. In the graph, accelerated vortices of time in physical systems, in different scales of the fifth dimension: charges, masses and thermodynamic eddies become then the main clocks of time that carry with different speeds according to 5D metric ( $S \times T=K$ ), the information of microscopic quantum charge worlds, human-size thermodynamic scales and cosmological gravitational scales.

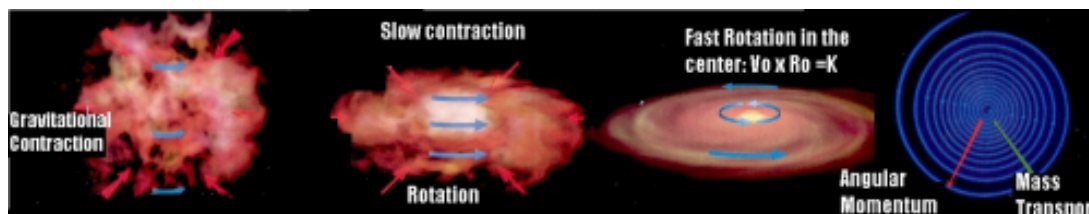
Those cyclical time clocks store the information of the Universe in the form and frequency of its cycles. And the law explains why smaller computers process more information with faster clock-cycles, genes store more information and reproduce faster, every day, than we do...

So we translate 5D metric into vortex equations in different dimensions, the simplest being:

$V_o$  (speed of time clocks) x  $R_o$  (length of radius) =  $C$ , which is the equation of any bidimensional vortex.

As the cyclical clocks store the information of the Universe, it also applies to life, reason why an insect thinks 10 times faster than a large organism, and a rat has much faster metabolic rates than an elephant.

And vice versa, larger systems in Nature must have a space-distance=time-speed much larger, which we can see as lineal distance in space or faster speeds in time.



A dimension of angular time-momentum coming out of a loss of a dimension of volume-space. Attraction laws are then evident and intuitive: In the same manner a vortex of a storm attracts more the faster it turns, sucking in its surroundings, any accelerated space-time vortex, increases the speed of the mass/charge clock according to 5D C=st metric, the smaller it is (S) and hence the smaller it turns, the more it attracts.

**Unification of charges and masses as time-space vortices of 2 scales.**

Thus since a charge is smaller than a mass, it attracts much more and the unification equation follows just when we apply 5D metric, and shrink the galaxy in the same proportion we accelerate them. Then both equations match:

$$\frac{F_e}{F_g} = \frac{k_e q_{proton}^2}{G m_{proton}^2} \approx 10^{39}$$

So mass,  $E=mc^2 + E=hf$ ; hence mass = frequency  $(h/c^2)$  is a cosmological slow vortex, and charge a quantum faster more attractive vortex.

Further on since curvature is synonymous of cyclical speed, it can be quasi-infinite in the smaller vortex, when measured in time speed as the speed of angular rotation. So if we were to apply 4D curvature's equations (Einstein) instead of Newton, the results would be the same, just in the far more complicated formalism of EFE.

Those are the essential concepts to define charges and masses as accelerated time vortices of two different scales of the Galaxy. And from that it is only just an easy task of mathematical manipulation to unify them in 5D metric, as both are equal: when we slow down the speed, space enlarges to remain co-invariant. And as it happens a Hydrogen atom enlarged to the size of a galaxy slows down in rotation to the angular momentum of the galaxy. So Kaluza–Klein were *right - the fifth scalar dimension unify gravity with electromagnetic forces but in a fractal manner, with 5D metric, unbeknownst to physicists.*

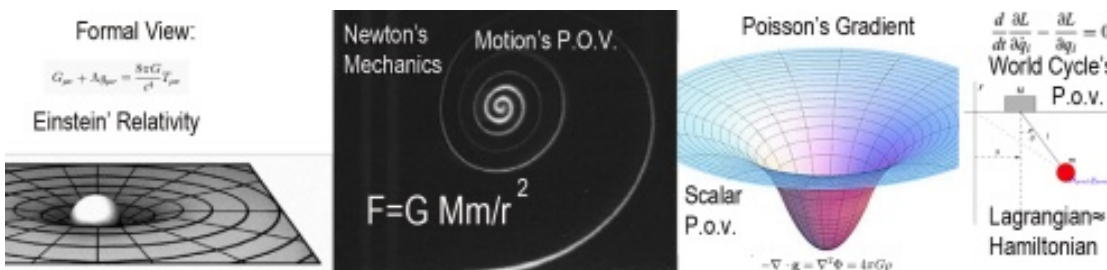
Once we do have a proper understanding of the 5 Dimotions of physics it is very easy to refound the science and its equations in far more straight-forward general laws proper of all space-time systems and solve most of the conundrums of physics, embroiled by the error of lineal time and single space-scales.

Since as long as physicists don't accept 'duality', trinity and pentalogic, the use of entropy and information as equal arrows of time, they will not be able to resolve the conceptual contradictions of its disciplines.

It is just another 'practical case' derived from the scalar fifth dimension, which first was rightly (even if the maths were somewhat faulty) introduced in conceptual terms by Kaluza and Klein as a mode to unify 'two different scales' of size of the Universe, the gravitational 'c' scale and the 'Planck' h-scale, which are the two limits of the galaxy's 5th dimension metric:  $S(c) \times T(h) = Cst$ .

What mattered of his concept now forgotten is its idea that both scales could be unified if we treated them with a similar jargon, which for obvious reasons could only be the jargon of 'Relativity', derived from Poisson's jargon, derived from Newton's jargon of 'vortices of space-time' - our cyclical clocks and orbits of planets above. So for sake of simplicity we shall use the easy Newtonian jargon, to unify both scales according to 5D metric - the so long seek Unification equation of charges and masses.

The unification of the 5 forces in terms of its 5D metric scalar equations, and its equivalence with the 5 dimotions of the galactic organism requires a deep understanding of the S=T paradox that makes any 'state of stop-space' equivalent to a 'motion in time'. So we can study mathematically with different 'spatial, topologic' vs. algebraic, temporal equations and ceteris paribus perspectives every event of time-space; which accounts for the diversity of formulae for the same forces:



In the graph, regardless of pedantry in physics, the 4 formalisms of

gravitation are equally valid, as they merely reflect the degree of detail in our analysis, either in 'space=static' form (Relativity-curvature) or dynamic motion (Newton), from a dual scalar view (Poisson gradient), or based in the conservation principles of the 3 'parts' of a physical system (Lagrange). We shall then use here the earliest, most evident, simpler dynamic view – Newton's timespace vortex, to unify mathematically the 2 limiting scales of the galaxy: the quantum world of charge vortices & the cosmological scale of mass space-time vortices.

The principles that matter are Einstein's equivalence between acceleration and mass, which we extend to all scales. So an attractive cyclical force is an accelerated clock of space-time, a 'vortex' of any scale:

Newton is a dynamic view, Einstein a static one. Einstein's derived his formalism from Poisson. As it is a spatial view of 'still derivative pictures' of the gravitational motion it is more detailed than Newton's because it is according to the Galilean paradox (S=T) the spatial still perspective of those vortices as a series of simultaneous derivative measures.

Lagrange's on the other hand is a complete different view, as it does not take the S=T geometric-temporal perspective *but the principles of conservation of a physical organism*  $St(\text{angular momentum}) < ST\text{-energy} > t\text{-lineal momentum}$ . *But all those principles ultimately derive from 5D metric. In the case of Newton>Poisson>Einstein, the vortex law,  $V(t) \times R(s)=k$ , in any number of dimensions (3 in this case), the Lagrangian, Hamiltonian, from the conservation of energy,  $S=T$ , as the balanced point of present of all systems.*

*Einstein's just reduces the temporal continuous Newtonian view of a spacetime vortex into an  $\infty$  number of infinitesimal detailed pictures, focusing not on the speed but on the curvature of the vortex (which is the spatial definition of a moving cyclical speed - the faster it turns, the more curvature it has in 'still mathematics').*

Let us do the maths in the simpler Newton's formalism, whereas by the paradox of Galileo S (Curvature) = T (accelerated motion). So the Universal Constants (G, k), define the curvature of 2 space-time vortices at the  $\Delta-1$  quantum charge and  $\Delta+1$  cosmic mass scales ( $\Delta$  is the symbol for the different  $\pm j$  scales of the fifth dimension within a given organic system). Its formalism of a vortex of time space is then Newton's Unification Equation:  
 **$M, Q = \omega^2 r^3 / U.C.(G, k)$**

It applies to all vortices of time-space from particles to planets to galaxies. For example if we substitute for the Earth-sun system we obtain G, (1st ever theoretical deduction) and if we substitute for the Bohr Radius and Proton Mass, we obtain k with a  $10^{39}$  higher curvature value, the exact difference between both forces that solves its hierarchy problem. As curvature in space is symmetric to rotational speed in time, so it is symmetric to the attractive force of any vortex. It works marvels when we translate electromagnetic jargon to Newtonian jargon. For example it shows the 'isomorphism' (systemic jargon for an equal 'form' between scales) between atoms and galaxies, which H-atoms of the cosmic scale.

*Since when we translate electromagnetic equation into gravitational mass vortices, the proton radius becomes the Schwarzschild radius of a black hole and its electronic orbitals its star clouds, a result foreseen by Relativity that modeled galaxies as Hydrogen atoms in the Einstein-Walker Metric of the Cosmos.*

Let us put some easy numbers by substituting the parameters in that Unification equation for the values of the sun (mass) minus earth (rotational speed and radius) to get G, which any high school student can do:

Sun mass =  $2 \times 10^{30}$  kg; Earth's angular velocity  $2 \times 10^{-7}$  rad. per sec.

Earth's orbit = 150 million kms.

Result:  $G = 6.67 \times 10^{-11} \text{ kg-1 m}^{-3} \text{ rad. sec.}^{-2}$

This is standard gravitational theory. What has never been done, because the fractal systemic view of the fifth dimension was not known till recently, is to substitute in the same equation of gravitational cosmological masses the mass radius and speed of the space-time vortex by the values of the fundamental quantum space-time vortex, a hydrogen atom/charge.

If the thesis of a fractal universe made of hierarchical scales is truth, then those values should give us the value of the universal constant of charges, the Coulomb constant.

Indeed, if we substitute for the proton (mass) and the Bohr electronic orbital (speed and radius)  $4 \times 10^{16}$  rad. sec.  $-1 = w$  (electron);  $5.3 \times 10^{-11}$  m. (Bohr radius); proton mass =  $1.6 \times 10^{-27}$  kg.

Then we get a G, which is  $2 \times 10^{39}$  stronger than the gravitational radius; thus, the hydrogen atom behaves as a self-similar fractal scale in the quantum world to a solar system.

And then you can get also the electron radius expressed in the jargon of a quantum gravitational world using the translated 'Gravitational Coulomb constant':  $G(k)M/c^2$ .

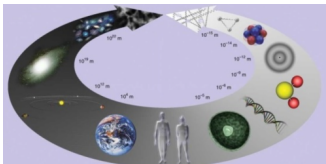
Since in that expression  $M$  is the mass of a proton,  $G(k)$ , the electromagnetic constant is a gravitational constant, and  $c$ , light speed, that expression is exactly the Schwarzschild radius of a quantum black star.

Thus, the electron Bohr radius, which is the final radius of minimal size and energy in electrons, is isomorphic to the event horizon of a black hole in the quantum gravitational world.

Those results (more than a decade old), are a *1<sup>st</sup> theoretical deduction* of Ke departing from G and the enormous simplification of the parameters of the electron radius till arriving to the same expression that a black hole radius cannot be by chance. They are mathematical deductions, one of the 3 *standard forms of proof in science*.

Yet a theoretical calculus of those values cannot be exact 'by chance', unless the theoretical model behind it – the fractal self-similar structure as  $\$t$  (Space population)  $\times$   $\delta\delta$  (Temporal frequency) entities of all physical systems is right. Thus, the previous calculus is a clear proof that both, charges and masses, are unified as values of the same type of space-time vortices in the 2 different scales of space-time of the Universe. And they are geometrically unified from the p.o.v. of geometrical relativity not from quantum theory, as Einstein wanted it.

Galaxies, (Galaxies $\approx$ Atoms) thus resolve the philosophical question on how many 5D scales exist; as we find enough self-similarity to 'run again' another game of fractal scales (not identical but self-similar as in a Mandelbrot fractal) both by quantitative and qualitative methods between the atom and the galaxy. A question that might be extended to the ST dualities of open, 'entropic strings' and closed 'cyclical informative strings', in a possible larger and smaller scale of microscopic strings and superstrings:



Ouroboros the Universal Snake, bites its tail on the string quantum and cosmological self-similar scales, as perceived from the human  $\Delta o$  mind. Philosophy of science would then argue that those scales are real, but part of its self-similarity is mental: that is, the loss of information in the perception of scales make humans extract the same information from the upper and lower  $10^{\pm 30}$  scales.

What about the Hyperuniverse? We do not know what the infinite Universe even in its local region of galatoms looks like, though due to the expansion of space between galatoms, is likely an entropic gas of local atoms on the hyper-Universe. It is not though a big-bang Universe, because even if we run backwards the expansion of space between galatoms, the implosion of information in galaxies, counter that effect, so at best, we could say that running backwards the big-bang equation we shall meet a 'solid' crystal of galatoms.

The scalar unification of forces opens up an entire new field of physics, not quantum gravity, the description of cosmology with quantum laws, but fractal relativity, the description of the  $\Delta-1$  quantum world as a similar scalar plane of space-time to the  $\Delta+1$  cosmologic world.

### **UNIFICATION OF 5 GALAXY'S FORCES AS ITS 5 DIMENSIONAL MOTIONS, WITH SCALAR SYMMETRIES.**

"I would like to emphasize something. The theories about the rest of physics are very similar to the theory of quantum electrodynamics: they all involve the interaction of spin 1/2 objects (like electrons and quarks) with spin 1 objects (like photons, gluons, or W's) within a framework of amplitudes by which the probability of an event is the square of the length of an arrow. Why are all the theories of physics so similar in their structure?

There are a number of possibilities. The first is the limited imagination of physicists: when we see a new

phenomenon we try to fit it into the framework we already have—until we have made enough experiments, we don't know that it doesn't work. So when some fool physicist gives a lecture at UCLA in 1983 and says, "This is the way it works, and look how wonderfully similar the theories are," it's not because Nature is really similar; it's because the physicists have only been able to think of the same damn thing, over and over again."

Richard Feynman. "QED: The Strange Theory of Light and Matter"

So what about the unification of the other forces in scalar couples? It follows immediately when we consider them the scalar symmetry and similarity of the 5 Dimotions of the galaxy:

The Scalar similarity between the strong force and the gravitational force 'inside the atom-galaxy', both attractive 'only' and the outer force of the galaxy (repulsive gravitation aka dark energy) and the outer force of the atom (electromagnetic repulsive expansive forces) is immediate as it is the parallelism between magnetism and gravitomagnetism (Heaviside's discovery). While the weak force is NOT a force but the evolution of the families of particles between scales.

Because physicists only consider one scale and one time arrow they are obliged to model all those forces, with lineal concepts reducing them all forcefully into an exchange of lineal particles, when they are clearly different forces. For example the weak force that happens in a single point transforming a particle into one of a higher scale of larger masses, is represented with a gap that 'exchanges' the W-particle, NOT as Fermi shown first, an evolution of a higher particle into a heavier one, that then suffers an entropic process of dissolution in 3 parts.

Such 5D variety of forces makes possible the organic functions and structure of self-similar atoms and galaxies. So we couple forces according to their  $\Delta \pm 1$  'symmetry of scale' as 5 forces equivalent to the 5 dimensional motions,  $ab \cdot \partial_j$ , of physical systems within galaxies. They must be studied in dualities, belonging to two different scales - the cosmological,  $\Delta+1$  scale (gravitation & dark energy) and the  $\Delta-1$  quantum scale (strong force and electromagnetism); whereas the dualities relate gravitation and strong forces and electromagnetism and dark energy; while a transformative, 'weak force' trans-forms particles between 5D scales.

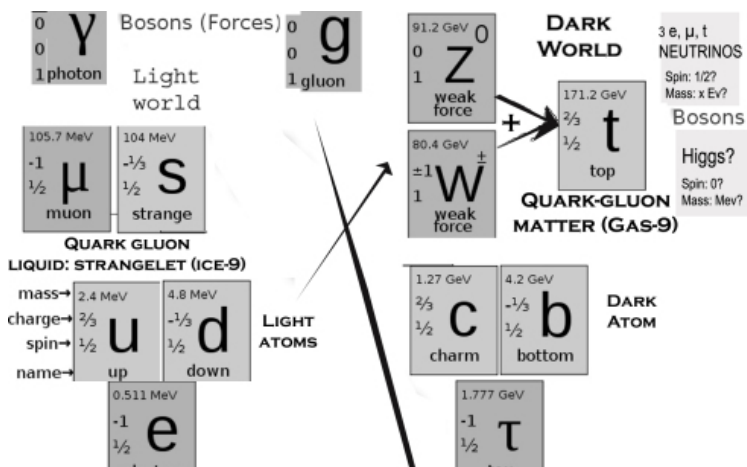
**RECAP.** Because all systems made of scales of vital space that last a tie cycle, they all have bio-topo-logic properties. So we need *always 3 scalar perspectives that give 3 symbiotic properties. In the galaxy thus we talk of:*

1. A scalar view that defines the **galatom**, by similarity of the atomic and galactic scale unified with 5D metric.
2. A Human view that defines the **galaxy**, our present single perspective with a single light spacetime continuum.
3. A Galactic view that defines a '**galacell**'(nt.1) that is the galaxy as an organism, controlled by 'DNA-like' black holes. So we can now study the galaxy as an organic system with its 5 Dimotional, organic networks of forces.

Haldane one said, the universe is more complex and strange than humans can understand or even imagine... Yet its basis are amazingly simple – a property of fractals that by self-repetition and recombination originate from a very simple Generator equation, infinite variations of the same theme: the scalar superorganism.

**The symmetry of scale between the 2 families of mass: uds, strange and bct, top decuplets.**

In the graph we can see how this dark, gluon-top quark soup (toplet liquid) of a gas-9 reaction (black hole quasar explosion), neatly reclassifies properly the 3 families of increasing mass in the Universe:



The reordering of the strange and top quark triangles of mass define the symmetry between the  $\Delta-1$  and  $\Delta+1$  scales of 'atoms and galaxies', in terms of its  $\Delta-1$  components (quarks).

The existence of 2 x 3 mass families responds to:

1. the ternary topologic & scalar symmetry between the 3 parts of the organic galaxy - Halo

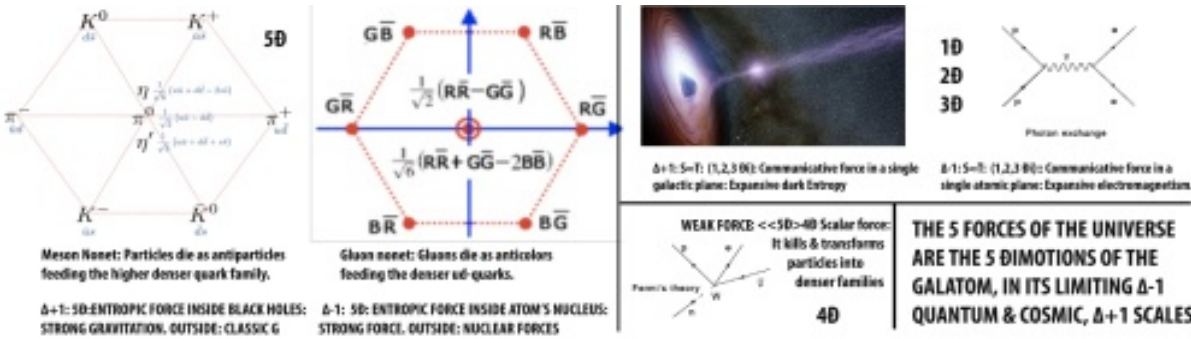
of strangelets, nucleus of Black hole stars and vital space of ud-light atoms and...

2. The duality of quantum particles and cosmic galatoms:

The human scale Light atoms are made of ud quarks. Heavy black cb-atoms atoms make the cosmic black hole scale. Whereas the Strange and Top quark, act as the 'central nucleus' of the most perfect, heavier stars, pulsars, and largest, galactic black 'stars' (black holes), whose 3 varieties we shall study latter in great detail.

**Informative Δ±1 forces. Scalar similarity between protons and black holes, strong and gravitational forces.**

This symmetry extends to its combined forms, as gluon become symmetric to mesons. So in the atomic scale, the carriers of the internal strong force are color+anticolors=gluon particles-antiparticles, 'feeding' the reproduction of quarks. While in the cosmic scale the carriers of the strong gravitational force inside 'black stars' (formerly black holes) are the nonets of pairs of particles+antiparticles= mesons, feeding through the weak force (W, Z, H bosons) the heavier BT quarks.



In the graph Δ-1: ud quarks = Δ+1 cb quarks. Δ-1: Gluons = Δ+1 mesons. Δ-1: protons = Δ+1 black holes.

Thus, the force that transforms particles between scales,

responsible for the 4th Dimotion of evolution and generation of heavier particles or its 5D inverse Devolution is the weak force that mediates all those processes. It is not really a force but an evolutionary process that happens in a single point of space (right side), where the intermediate state of higher energy mass (W, z, H boson) gives birth to heavier fermions.

In the next, the strong and gravitational j±1 forces are similar in the limiting ±j quantum and cosmological scale. They both 'absorb' and in-form into denser entities, lighter particles, to collapse them in the central black holes=cosmic nucleon region or quarks=quantum nucleon regions: From left to right, the identity between the nonet of gluons and mesons on both scales, the WRONG procedure of reductionist physics, which models all forces with the lineal concept of electromagnetism through an exchange of particles, as the weak force happens in a single point, hence it is a transformation guided by information; in the right the proper way to understand particle-antiparticles, as the relative arrow of life and death that closes a physical world cycle (Feynman). The hypothesis of work for the model of the fractal Universe is simple: a galaxy is self-similar to an atom, and so are the different forces interacting within and outside them:

1. The *strong force is similar to the gravitational force* in the extremal conditions of the black star. Reason why both are non-lineal.
- 2, The *force is similar to the expansive dark energy* between galaxies, which therefore is NOT the same force than gravitation, reason why the expansion between galaxies is a lineal force and it is similar to electromagnetism
3. The *weak interaction is NOT a Locomotion*, force but a process of evolution of particles, guided by the Dimotion of information, reason why it happens in the same spacetime, and so its bosons, W, Z, H are 'states' of the same particle, NOT carriers.
4. The proton has in 5D the same metric that a black hole, is self-similar to a black hole, with a Schwarzschild radius. So happens with the electron in its particle state (Carter). We will expand on 'black hole stars' latter.

5. Antiparticles are the inverse death=entropy moment of particles=lifetime, reason why we see less of them in terms of an ST-dual perspective, as we see less 'dying corpses', which is an event that last a quanta of time that living beings, which last longer. So since S-populations of particles-organisms and antiparticles-corpse are the same but its time duration is different,  $T(p) \gg T(\text{anti-}p)$ ,  $ST(p) \gg ST(\text{anti-}p)$ . To that fact we add the fact that if we model, as we shall do black holes as Tbc quark stars of the heavy decuplet, as CERN recently found up Bottom and charm quarks that should form heavier Dark atoms, decay more often into particles of our 'lighter'  $\Delta-1$  light scale. Because time is cyclical and local, and *the arrow of future information is inverse to the local arrow of past-entropy that dissolves form, we represent as Feynman did, antiparticles as local travels to the past.*

We model black holes as protons of a larger 'galactic scale', strong forces as extremal gravitational forces, gluons as mesons, dark energy as electromagnetism and complete by self-similarity ALL the questions of physics, as we either perceive from within the "galacell", the internal region of an atom, and outside the atom, the external region of the *galacell*. So the identity between the nonets of gluons in the strong force and mesons in the larger scale of quarks, coupled with the concept of particles-antiparticles forming a local world cycle renders a clear-cut theory of black holes as protons of a larger scales, in which the transformation through the weak force of light matter into heavier quark matter will produce a black hole star of heavy dark matter; whose heavy quarks happen to decay a 20% more often into particles than antiparticles (CERN), resolving the  $p \rightarrow \bar{p}$  problem.

**RECAP.** 2 consequences of the scalar, cyclical nature of space-time are the basis for the whys of astrophysics: cyclical big-bangs in all the scales of reality; and scalar disomorphisms between galaxies and atoms.



## COSMOLOGY: WORLDCYCLES OF PHYSICAL SYSTEMS: SCALAR BIG-BANGS

So how does the Universe look as a relative fractal, whose purpose is to reproduce information and preserve it through cycles of time enacted by its  $\infty$  Timespace Superorganisms performing locally 5 Dimensional motions? Let us have a fast review of the cosmology of a fractal, organic, immortal Universe of  $\infty$  0-sum balances.

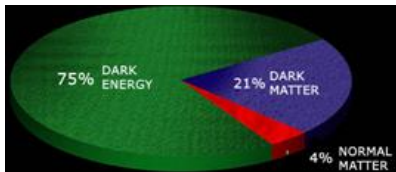
### Logic Consistency: The Infinite, Hierarchical Universe

In the 1970s, Mandelbrot gave the hierarchical paradigm new life and widespread exposure by developing the mathematics of fractal geometry and demonstrating that fractal phenomena based on hierarchical self-similarity are ubiquitous in nature. In this way natural philosophers, empirical scientists, mathematicians and theoretical physicists found the infinite fractal paradigm. There are distinct versions and theoretical explanations for why nature is organized in this manner, but the general paradigm that nature is an infinite hierarchy of worlds within worlds has fully arrived, and will probably be our dominant cosmological paradigm for the foreseeable future: In the fractal paradigm, the Universe is infinite and the big bang is not the birth of all realities, but any local big bang and big crunch dual process, any explosion that splits the physical energy and information of a complex system, in any of the multiple scales of physical reality. So first for the impatient, we shall have a fast glimpse to how a fractal Universe look when we add scalar elements to the 'entropic big-bang'.

### Scalar entropic big-bangs in a balanced immortal Universe. The Galatom.

In the fractal model a big-bang is the entropic death of physical matter. But the Universe is also scalar and it has information, a dimension of form, signified by the gravitational informative force, physicists ignore in their calculus of its expansion, happening in galaxies that balance the dark energy between them, we shall find both, balances of forces that make the Universe wobbling, and big-bangs and informative forces in multiple scales of the Universe, talking of multiple big-bangs balanced with big-crunches.

So how we shall correct big-bang theory to fit into the fractal view of the Universe? We dedicate many pages on the articles of astrophysics to that matter but let us just give you a prime:



Right, when we add the gravitational force that warps 1D space into 3D mass in galactic vortices, they balance the expansion of 1D space in entropic vacuum as light dies into dark entropy lines between them. As mass warps 3 1D flat-vacuum into a 'high volume' its 3 times more powerful in its warping, hence the 75-25% Balance of mass to dark entropy. Thus the fractal Universe is immortal. On the right its scales all suffer similar  $e=mc$  dual processes of warping through gravitational forces of cyclic momentum that create those galaxies, and expansive big-bangs of lineal momentum balanced in combined cycles of energy - the 3 conserved quantities of each fractal spacetime physical organism, which put together give birth to the 3 conserved laws of nature the Big Bang totally ignores - among many other known-known laws.

So the use of a fractal space and cyclical time arrows fully accounts for the immortal Universe and its balanced 3 arrows of space-time, conserved in its infinite reactions; energy, information stored in the cycles and frequency of those systems of angular momentum, whose minimal constant form is  $h$ , and lineal speed, conserved in the constancy of light.

Why those obvious facts of SOUND physics are then 'reduced' to ænthropic creationist big-bangs in a single plane of space-time despite evidence? It is the ego paradox: what the big bang does for science is a religious 'closure' with man and its simplest mathematical lineal functions at its center, which added to the denial of organic sentient properties to physical reality allows to feel the high popes of science a sensation of absolute knowledge, as the religious person feels that all is known in the mystery of god - a word eerily similar to the lineal function of the big-bang ' $V=Hod$ '.

Big bang cosmology ignores gravitational informative galaxies & dark matter & the scalar structure of the Universe reducing space-time to a single scale, and the cyclical nature of time, we must correct the big-bang, which corresponds to the limit of a 5D complete theory of reality in a single 'light' space-time continuum.

The big-bang entropy-only theory of the Universe dismisses galaxies all together, as they are NOT expanding, and if the galaxies are NOT expanding, running backwards its present implosive system would mean a counter-effect to running backwards the expanding Universe. Backwards in a single time, the space between galaxies contracts, but the galaxies between space expand and a balance again is achieved: Since when we add the gravitational force that warps 1D space into 3D mass in galactic vortices, they balance the expansion of 1D space in entropic vacuum as light dies into dark entropy lines between them. As mass warps 3 1D flat-vacuum into a 'high volume' its 3 times more powerful in its warping, hence the 75%-25% balance of mass to dark energy.

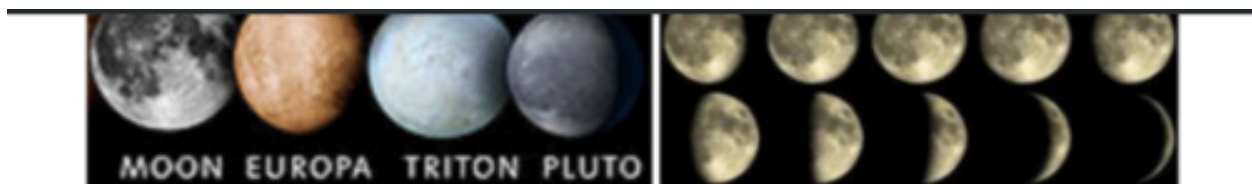
Thus the inverse arrow of gravitational information compresses dark energy into matter and balances the arrow of expansive space between galaxies, describing a fractal immortal Universe where a big-bang is merely the entropic arrow of dissolution of matter guided by Einstein's equation in any scale:  $E \leftrightarrow Mc^2$

In next graphs, we resume the model of the fractal Universe in which each scale have similar big-bang deaths:

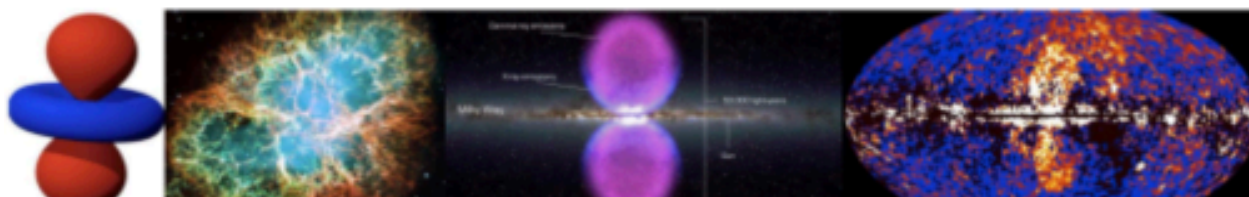
Scalar big-bangs that happen from Beta decays (right picture) that explodes nucleons into atoms, Nova that explode stars and maybe planets doing experimental big-bangs at home, to quasar black holes that give birth to new galaxies. All scales suffer similar  $e=mc^2$  dual processes of warping through gravitational forces of cyclic momentum that create those galaxies, and expansive big-bangs of lineal momentum balanced in combined cycles of energy - the 3 conserved quantities of each fractal space-time physical organism, which put together give birth to the 3 conserved laws of nature, which present Big Bang theory ignore. Instead a fractal space and cyclical time arrows fully accounts for the immortal Universe and its balanced 3 arrows of space-time, conserved in its infinite reactions; energy, information stored in the cycles and frequency of those systems of angular momentum, whose minimal constant form is  $h$ , and lineal speed, conserved in the constancy of light.

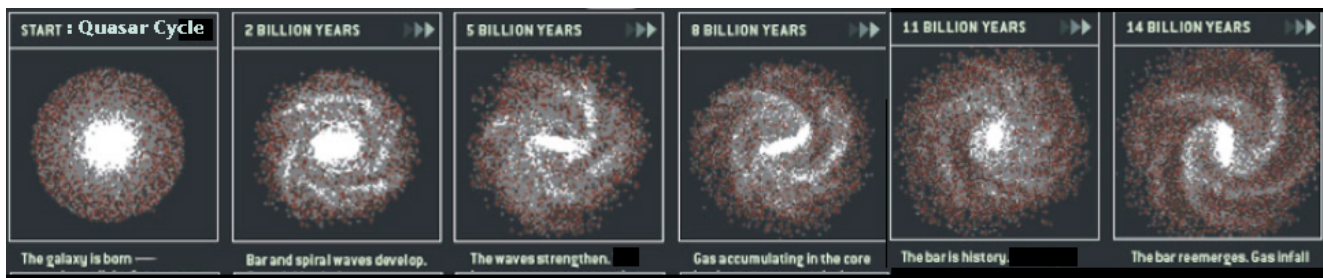
In the center we see a map of the Galaxy, which just recently showed to have two lobes similar to those of the first electronic orbital of a Hydrogen atom born in self-similar fashion in the quantum scale. In the left side we see the background radiation that is supposed to come from the Big Bang 13 billion years ago, but HAS in its center the exact 2 lobes recently found above the black star. This came as a surprise.

Above, the local explanation of the background radiation, which is a local measure, hence must and can be explained by local causes in the galaxy: any moon M.A.C.H.O., (Massive Cold Halo Object); that is, a quark nugget of heavy quark matter or a similar black hole that has eaten the mass of a moon will produce the exact same



In the graph the alternative model of the background radiation: a micro black hole with the mass of the commonest object of the galaxy, a moon will radiate exactly the same temperature. So it is more logic to consider that radiation comes from the galaxy, either from black holes or strangelets which have eaten a moon and will redshift to such temperature the light of the galaxy - as all physical particles come in similar quasi-identical forms; those primordial black holes should emit 'now' a BG radiation locally and as most should have migrated to the Halo (Hawking's hypothesis); they should form a 'protein-like' protective structure, the membrane of the Galatom. Yet unlike in Hawking's hypothesis they have not evaporated, as we see no signature of evaporation coming from them; only the redshift of light at 2.7 k, once they have 'eaten' a moon, that has become a dark, millimetric black hole, we shall call a 'Moon MACHO' (MASSIVE Cosmological Halo Object)





background radiation by gravitational red-shifting. Thus as moons are the commonest objects, we can talk of primordial black holes and/or strangelets as the local, 'present' cause of the radiation. Since epistemology always favors a local 'present' solution far more sound experimentally than a 'derivation' from a non-measured experimental past in a non-measured larger region (the cosmic big-bang whose temperature 'comes from the past', reduced by a lineal equation and is extended hyperbolically to the non-measured entire Universe), it follows the fractal big-bang, is sounder. So what physicists call the cosmic big-bang likely does not exist, as the limit of scalar big-bangs we soundly measure are quasar big-bang.

Finally French astronomers tabulated for them a 15–20 billion year cycle which explodes central black holes, explaining the hyper-abundance of Helium in the center of galaxies. So a galaxy has a 15 billion years cycle in an older immortal Universe, since the arrow of information that shrink energy into mass in galaxies balances the entropic 'cosmic electromagnetic' repulsion of dark energy. Interesting enough if we reduce a quasar big-bang of 15 billion years, with 5D metric, accelerating its time clocks as we reduce size in space:  $\delta \times \delta = K$ , it reduces 15 billion years to 15 minutes (: the exact duration of a beta-decay neutron Big Bang).

We falsify the cosmic bang with experimental & epistemologic known proofs distorted by cultural reasons that make it a pseudo-religious dogma of the worldly religion of physics – to make entropic weapons in a military society- and the western creationist religion of most founding fathers of physics, with its lineal Abrahamic time views & anthropic beliefs of man at the center of reality reflected in the lineal, created out of nothing cosmos.

### Cosmic vs. Quasar big-bangs

$E \leftrightarrow M$  (whereas  $c$  is the constant of speed of each Universal scale,  $c$  for the galaxy, not necessary so for other scales) is dual and there are scalar big-bangs from beta decay to quasars and maybe beyond is certain. So the question we want to find out is which of the two larger scales of big-bangs, that of a quasar big-bang or a cosmic big-bang fits better real data. Since as we can see in the images above, on the right, they are similar in form.

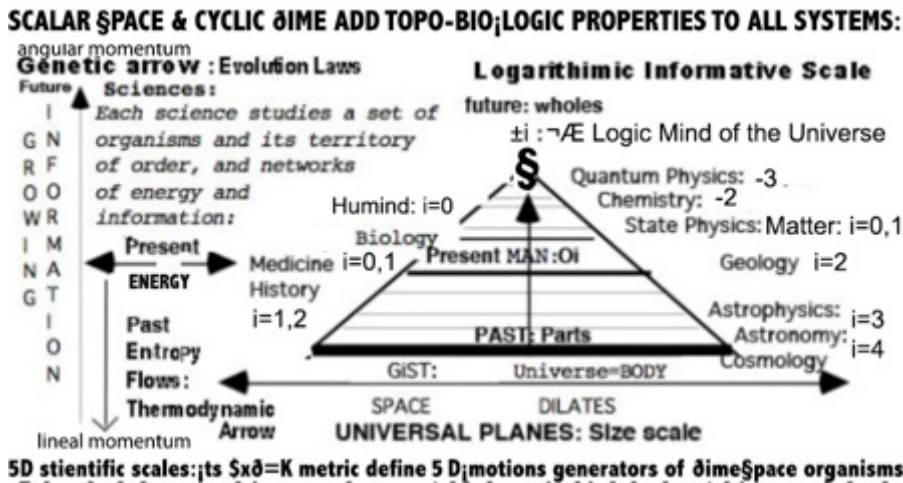
To play ball with cosmologists we could justify the big-bang in 5D since if we accept our limit of light perception as the limit of the Universe (cosmic horizon); then the  $\sim = @ = S = T = \Delta$  symmetries between spatial range, time aging and scalar density of populations all fit within the 'magic number' of  $10^{11}$  elements for most super organisms of reality. So the symmetry also happens in the 'limited perception' of the cosmos:

Most galaxies have  $10^{11}$  stars. The total mass of all the stars in the Milky Way is estimated to be between  $4.6 \times 10^{10}$  and  $6.43 \times 10^{10}$  sun masses. And the Universe is considered to have around  $1.6 \times 10^{11}$  galaxies.

So we could say that the galaxy is just a scale below the big-bang (a huge galactic molecule so to speak), as the neutron star is just a scale above the neutron ( a huge neutron molecule so to speak). And that it exploded in a big bang of the next scale of the universe. But that is just the astounding beauty of pentalogic, where the 5 Dimotions/elements of reality are in balance. So for the limits of our entropic perception ( $\sim = @$ ), we observe similar quantitative and qualitative limits for S-patial population, T-ages within our  $\Delta$ -scales. *But a* more profound understanding of those limits considers that the local perception of a few galatoms is just a very reduced quantity of the whole number of galatoms of the next hyperscale of the Universe that should be of zillions of them, and all of them living as Protons and black holes without evaporation do an immortal time.

The immortality of the Universe indeed becomes evident as Protons are immortal and black holes are also immortal without evaporation, once we put properly in place the arrow of time of Hawking's awesomely beautiful equation as those of the birth of a black hole into its gargantuan future, NOT of its entropic death=evaporation to the past.

**PHILOSOPHY OF NON-Æ STIENCE: STIENTIFIC PLANES OF SPACE-TIME. DISOMORPHISMS.**



Let us try to make a more complex assessment of the ginormous amount – and this is only the tip of the iceberg of the ‘thoughts’ of God (: all the details buried in the infinite sea of species would take an ‘encyclopedia galactica’ as only the whole holds all the information about itself):

The graph of more than 20 years, which I soon converted in a painting ascending through the 5<sup>th</sup> dimension I carry with me everywhere in my wandering life of wonders, as Mr. Leonardo, the son of another notary with little interest for his work, lost in the western Mediterranean basin, did with his monalisa, perhaps in-loved as I am of the fractal Universe, resumes what is all about: *The Universe is a, infinite, immortal, sentient, social, reproductive fractal; where the two arrows of absolute future, are exactly inverse to those ‘anthropic man’ recognizes, NOT TT-entropy and Ts-locomotion, but ST-reproduction of St-information that communicates and evolves SS-linguistic forms in a sentient complex reality.*

It is essential for you to understand that the 3 scales of an organic co-existing system are completely different in language of thought (@-mind) as the larger is organic, the smaller is quantic, numerical and the middle one is e-motional, active, topology of existjence, (S-pace), as the smaller one is hyperbolic, the middle one flat, and the upper one elliptic, in time ages, as the big lives longer, seems immortal to the fleeting small quanta, reproduced every day, synchronous though all of them to the beating time of its middle heart; and so we come in this manner to the entropy limits of death that the larger imposes on the smaller constrained to its territorial substance, crowded by clone brothers – *but all laws are within the Ælgebra of Δ-scales* – the Holy of wholes.

Thus we set an absolute ‘dimensional motion’ (ab. dimotion) of spacetime. Because for a whole  $\Delta+1$  to exist, the parts ‘ilogically’ must come first; so social evolution and love between parts is the absolute arrow of future for the organic Universe, or ‘future’, while a form that repeats itself seems not to change, so the function of reproduction is the absolute arrow of present, leaving thus entropy= death, the dissolution of form as the inverse arrow of past. So we draw the 3 ‘dimotions of space-time’ in terms of the 3 time ages of absolute past (TT-entropy=death) and its relative lesser Ts- locomotion; ST-present reproduction, which is the function that maximizes  $SxT$  ( $s=t$ ) existjence in any scale of stience and the relative future of St-communication of information that evolves parts into larger social wholes, herds and superorganisms; whereas the absolute future, SS, is the language of still minds, shared by all of them – the game of Generational Space-time we explain here and its two fundamental mirrors of space and time (mathematics and logic). It is an architectonical perfect Universe as long as you abandon the illusion of the ego that cuts-off man from its entanglement with the self-similar whole and all its parts. Why humans do not see reality like that, has to do with the mind function and its distorted self-centered view.

## THE FRACTAL GEOMETRY OF THE TEMPORAL, 5D SCALAR UNIVERSE.

The Universe is a fractal of space-time. This means it is made of 3 elements, *which experimental sciences such as mathematics, express with its fundamental element:  $\Delta$ -scales* (expressed with scalar numbers) of different size in Space (expressed with geometry) with different speed of Cyclical Time motions (expressed with operands). Time is change, perceived as motion in space or change in the form of space (External change), in the in-form-ation of beings (expressed through topological inner change). Time and Space thus seem to be in perpetual conflict, transforming each other ad eternal. Time is thus similar to energy with a higher content of motion and space to information, with a higher content of form.

The 5<sup>th</sup> Dimension,  $\Delta_{\pm i}$ , is then the sum of all those scalar planes of spacetime where species *entangled as synchronous 'organisms' that co-exist in 3 of such scales,  $\Delta_{\pm i}$  (quantum, organic/thermodynamic and cosmologic/ecosystemic scale)* to live worldcycles of time, paradoxically faster, hence with higher frequency of information, the smaller the system is (chip paradox). Yet the product of both, the so-called metric of the fifth dimensions is constant, allowing the symbiotic exchange of energy and information between them. Thus this metric co-invariant equation, Space Size xTime Speed of its clocks= $\Delta_i$  defines a series of planes of space-time each one studied by a 'stience', from the faster, smaller world of particles, to the larger, slower cycles of galaxies, symbiotic to each other, as smaller systems process better in-form-ation, stored in the cyclical form and faster frequency of its clock cycles, coding larger systems that enclose its parts with protective membranes of slower time cycles.

The units of spatial form are fractal points with breath that grow in size as we come closer to them, unlike Euclidean points that have no breath; societies represented by numbers, which are groups of indifferent beings; 5 types of Times=motions; 3 topologic dimensions of space, which have dimensional motions (ab. Dimotions); the classic dimension of lineal time, or 'entropy arrow', and a 5<sup>th</sup> new 'dimotion' of social evolution and information, responsible for the arrow of life, organic evolution of parts into wholes and the 'mind-structure' of languages that mirror those organic systems in mind-mappings, of which the mathematical and logic and visual language are the most remarkable... It is a fascinating Universe, which humans don't understand because they drag through memorial routine and dogmatic beliefs many errors, we can trace to Greek geometry and Aristotelian logic of abstract points and single time causality, hardly corrected in 2000 years and the astounding incapacity of huminds to understand the mind 'distorts' reality and selects information, compressing all the scales of space-time into a single continuum, all the motions of time into still images (so we don't see the motion of the earth), eliminating all the information which we cannot translate into those 3 languages; despite the fact that for 500 years we have been watching those scales of the '5<sup>th</sup> dimension' with telescopes and microscopes (naïve realism). Once all this is understood and we have the tools to improve our languages of perception, it will be possible to reconstruct reality with an improved mirror, in which points become fractal points that grow in size when we come closer to them, so they are non-Euclidean crossed by infinite parallels of energy and information, creating networks that are lines with 'volume', messed into topological organic structures. And discover that the fundamental particle of reality is the 'fractal point', which has an organic structure, co-existing in  $\Delta_{\pm 1}$  scales:

- The quantum, cellular, thermodynamic/organic and cosmological/ecosystemic scales.

What guides then each of those beings made of fractal topologies of space with time=motion is simple: existence, survival, the conservation of its territorial, vital space and time cycles. The conservation of time and its motions and cycles, akin to the conservation of energy cycles becomes then the guiding automatic principle of all beings, as those who don't conserve their time become extinct. We thus talk of a game of existence in which systems will to maximize its intake of energy and information with its topological ternary parts, limbs/fields that move a reproductive body/wave commanded by an informative particle/head.

How can we formalize those systems? Easy, by improving our languages-mirrors of the laws of existence. That is, by developing a new non-Euclidean geometry of fractal points, lines, networks and topologic organisms and a new logic of multiple 'actions=motions of space-time'. We call this formalism, ilogic geometry or 'existential algebra', and all the laws of all stiences can be derived of its simple structures in space, scale and time.

But scientists are stuck in the huge amount of errors sciences derived from their faulty logic and geometry of time-space, and his mind egocy that doesn't believe what it doesn't see and limits organic sentient properties to

forms similar to himself; when electrons already have all those properties. The result are simpleton grand theories of reality derived of our languages' perception *confused with the whole reality* that we call linguistic creationism, either verbal anthropic religions that put man at the center of reality and make God and man speak the language that creates by naming things, or big-bang entropic theories of digital thought that put man and the machine at the center and its language mathematics as the creator. So the big-bang is based in a simple lineal equation,  $V=HoD$ , which against all kind of proofs of a fractal balanced immortal Universe cannot be denied.

We shall prove ad nauseam that all what exists is a space-time 'organism gifted of mind called logos' Plato of a 'higher logic than man's' (Augustine), as all 'points are a world in themselves' Leibniz, and deduce all laws of science from the simple laws of conservation of time, origin of the 3 ages of life and death of all systems, and the entangled topologies of space, origin of the organic structures of reality. And deduce from the elements of that reality,  $\Delta$ -scales, S-pace, T-ime, all the mirrors of @-mind languages and  $\neg$ -entropic limits of existence. But for you to accept that wider reality you need to be humble and go 'back to school' an entangle empathically with all other  $\Delta$ st beings.

Of course this is NOT going to happen any time soon (: just wishful thinking. Huminds *are part of reality and their limits to connect with the whole remain regardless of sages. I know all the excuses*, and no longer get sanguine as Planck or Einstein did. I would like though to remark a few of them; mainly proper of the limits of a mind to reflect reality as a compressed mirror with egocentric aberrations, entropic limits of perception and infinity mirrors' repetitions, as all related to the 3 real elements of reality,  $\Delta$ st and the 2 mental ones,  $\neg$ @.

Perhaps in physics the most important is *egocentricity*, as physicists love the complex details of its calculations and the creationist theory of languages. So they will abhor this paper because it shows a logic property easily deduced of 5D metrics ( $S \times T = C$ ): smaller systems have more information and detail about reality but that doesn't mean they can control better reality than larger, organic systems with less information. The opposite is truth. The larger whole has entropic capacities as it encloses and acts wholesale in its indifferent parts.

This means the slow time cycles of the whole planet are more efficient redesigning its microscopic highly informative parts in the membrain that all the little machines we work with. It means the organic properties of physical systems are easy to describe – it only requires the vital concepts of the program of survival, but they are more influential than the details. It means the true equations that matter are the simpler, because they act upon the larger scales whose influences goes down to every small part.

And it means that by denying the larger scales of time and space, huminds never will understand the universe.

A second remarkable consequence of *egocentricity* is the fact that while huminds have no problem whatsoever to postulate smaller scales, even beyond need (string theories), as they are smallish so they make us feel bigger; I have never been able to convince a physicist that a galaxy is an anti-atom like of a hyperuniverse, whose 'beta decay' big-bang is what they measure.

This attacks directly *egocentricity* (as the hyperuniverse likely have quintillions of galatoms); introduces uncertainty of knowledge and the mind 'freaks out' when you convince her she is just selecting a 4% of reality ( $\pi-3/\pi$ ), through the apertures ideally left by its ternary diameters in its membrain... That not even light is immortal and clearly decay with the standard  $10^{10}$  numbers of all systems. But specially that we mean absolutely nothing for some fucktard experimental physicist that might right now inject our galaxy in an accelerator provoking a cosmic catastrophe just to prove his hyperbolic theory of the absolute (: Don't take it personally. Irony humbles the mind and humility is what huminds need to understand something.

It also implies that between galaxies there is NO gravitational forces but dark entropy similar to  $\gamma$ -electromagnetic radiation. Recently we got a proof of it, when astrophysicists observed a huge magnetic field between galaxies guiding electronic flows, which is how from our scale we would observe two galatoms sharing a  $\gamma$ -ray particle (as electrons become for the higher scale the minuscule h-planckton of its light beams).

For a while I enjoyed translation of cosmic phenomena to atomic one, with maths, here we'll keep it simple. But the funny thing is astrophysicists do it all the time, from Einstein's models of relativity with galatoms as hydrogen to modeling stars around central black holes as photon clouds (what the electron orbital is made of)...

**$\Delta \pm j$  ST: ENTANGLING TIMESPACE CYCLES AND ITS SCALES.  
THE WORLDCYCLE OF EXISTENCE: ITS BALANCED MAX. REPRODUCTIVE  $S_i = T_e$  POINT.**

' $\Delta$ @st of spacetime you are, to Dust you shall return' Bible

'We can then put together scales of 5D space, vital topology and cyclical time to find the fundamental event of reality, a superorganism perceived in simultaneous space that traces a worldcycle in temporal energy.

Absolute spacetime is the sum of an  $\infty$  number of Timespace beings that observed in space become simultaneous super organisms, and when observed in time, traces a **worldcycle** of existence between birth and extinction; as all systems are born in a seminal seed, of faster time clocks, in a lower scale of the fifth dimension, growing socially till emerging in an organic scale, where they will live 3 ages dominated by one of its 3 topologic organs and its functions=dimotions, a young age of maximal locomotion, dominated by its limbs/fields, a mature age of reproduction dominated by the body-wave and a third age of information dominated by the informative dimotions, which finally exhausts all energy and as time-space never stops, it reverses its dimotion from information to entropy, exploding in the moment of death.

So we marry the 3 vital functions=motions of time and the 3 dimensions of space, either in 1 or 2D (height=spherical information, length=planar locomotion, width=hyperbolic reproduction) which merge in all Time-space Beings; and dominate one of the 3 ages of its life-death worldcycles, the past, young age of limbic entropic motions, the mature reproductive age dominated by the hyperbolic body/wave and the 3<sup>rd</sup> age dominated by the informative particle-head, when the illusion of time ends with an entropic big-bang death that dissolves the being into its 'scalar cellular, atomic parts', which lead us to the realization that time cycles NOT only return to its origin in a single spacetime continuum but they move up and down the scales of the fifth dimension:

**The 3 ages of existence of space-time organisms. Its 2 worldcycles and Metric functions.**

Let us deduce from those 2 functions the fundamental process in time of reality, the worldcycle of existence:

The *development of the Function of Existence* of a space-time organism, can be developed as a feedback function,  $S \rightleftharpoons T$ , in 3 sequential phases/ages /horizons:

*Max.  $T \times \text{Min. } S$  (youth); Max.  $S \times T$  ( $s=t$ ); Max.  $S \times \text{Min. } T$  (3<sup>rd</sup> age).*

They are the functions of the 3 ages of life, between  $S \times 0 \ T$  (seed in the lower plane,  $i-1$ ) and  $T \times 0 \ S$  (function of entropy=death), which develop 5D metric into an 'existential function' of 'extremal points':

**$\Delta^0 \rightarrow \Delta^1$** : The supœrganism worldcycle starts its existential function as a seed of pure form (4D) that creates its space-time form.

**$\$t$** : It is the first horizon or 'energy, youth age' of the cycle, in which energy dominates the system and so we write this phase as, max.  $\$t \times \text{min. } T$ .

**Max.  $S \times T$ :  $s=t$** . It is the present balanced age of the cycle or classic age of 'life', when energy and information are in a constant proportion. It is the most efficient age, when the cycle reproduces.

**ST: Max.  $T \times \text{min. } S$** : it is the 3rd age of the cycle when information has combed and exhausted the space-time field that warps into itself.

**$\Delta^0 \leftarrow \Delta^1$ :  $0S \times T$** : It is the end or death of the cycle that reverses its form and becomes energy again.

Existence is an  $\infty$  (ab. relative infinite, with an entropic limit of death) sum of 3 space/time planes, fluctuating between birth and extinction through those 3 phases or ages. The 3 ages of Timespace supœrganisms happen in all systems, including mental languages:

In State Physics they are,  $T_s$ -gas, the moving state,  $S_i = T_e$  liquid, the balanced state and  $\$d$ -solid the informative state; into Cosmology, where it describes the Universe as a space-time system that fluctuates between both limits, a form of pure time, the singularity (*min.  $\$t \times \text{max. } d\$$* ) and a form of pure space, the big- bang (*max.  $\$t \times \text{min. } d\$$* ):

*In Biology*, they are the 3 ages of living beings AND the 3 horizons of evolution of species.

In social organisms, through the subconscious collective mind of civilizations which in art styles mimic in a longer 800 year cycle of life and death of civilizations (according to 5D metrics a human social superorganism is larger in space – a nation, culture, religion – and so it lives longer in time).

**THE GENERATIONAL=LIFE CYCLE:  $e_{i-1} < E > ET > T < e_{i-2}$**

**SUPER-ORGANISMS D=EVOLVE BETWEEN 2 I-PLANES OF EXISTENCE IN 3+1 AGES DOMINATED BY ITS ENERGY, REPRODUCTIVE AND INFORMATIVE NETWORKS:**

**Birth:  $e_{i-1} < Youth: \sum E_i > Maturity: ET_i > Old age: T_i < Death: \sum e_{i-2}$**

**Human Socio-Biological Organisms:**

**Individual, living organism**

**Universal, Physical, Organisms:**

**Birth:  $e_{i-1} < Youth: \sum E_i > Maturity: ET_i > Old age: T_i < Death: \sum e_{i-2}$**

**STATES OF MATTER**

**GALAXIES**

**UNIVERSE**

**'Big Banging: Ill Horizons'**

The diagram illustrates a multi-scale generational life cycle. At the top, it defines the cycle as  $e_{i-1} < E > ET > T < e_{i-2}$ . Below this, it shows how super-organisms evolve between two i-planes in 3+1 ages, dominated by energy, reproductive, and informative networks. The cycle is broken down into Birth, Youth, Maturity, Old age, and Death, with corresponding 'i' values for each stage. The diagram is divided into five main sections: Human Socio-Biological Organisms (individual living organisms), Universal Physical Organisms, States of Matter, Galaxies, and Universe. Each section contains images and labels for different stages and 'i' values, showing a progression from individual cells and organisms to the entire universe. The 'i' values range from 1 to 9, representing different levels of complexity and existence. The diagram also includes a timeline for the universe, showing the progression from the Big Bang to the present and future, with labels for Particle Age, Star/Atomic age, and Black hole/Informative Age.



*All what exists is a supærganism of vital space tracing a 0-sum worldcycle of time through 3 scales of the 5<sup>th</sup> dimension: Born as a seed of fast time cycles in a lower 5D scale ( $\Delta-1$ :Max. T x Min. S), emerging as an organism in  $\Delta_0$ , living 3 ages of increasing information, as its time clocks slow down in its  $\Delta+1$  world to die in a time quanta back to  $\Delta-1$ . Yet the maximal point  $S_i=Te$  where reproduction happens defines the classic age, maturity, beauty, balance, survival of the system, all disomorphic jargons.*

The 3 ages of life emerge in human social superorganisms as the 3 ages of cultures and its 3 artistic styles: Min.S x Max. T (infantile epic, lineal art, as in trecento, Greek kuroi;  $S_i=Te$ ; balanced beauty, when form and size are in balance, the classic mature age; and Max. S x Min. T: baroque, 3rd age of a civilisation, whose subconscious mind is the art of its 'neuronal artists', the age of maximal form and an  $\Delta$ st for a no future, which is the age of war and death of cultures).

We talk of 3  $\Delta\pm 1$  scales of worldcycles as the being live in a placenta, then emerges as organism in a world:

**p: 0-1: its palingenetic o-1 social evolution** in the accelerated time sphere of existence, till becoming 1 (0-1 bounded unit circle in jlogic mathematics; quantum probability sphere of particles in physical systems; palingenetic fetal age in biologic systems; 0-9 memetic learning childhood in social systems). It is the highly ordered world cycle as a 'placental mother-energy world' is nurturing as memorial cyclical spacetime has erased errors of previous generations.

- **c: The outer 1- $\infty$  world**, in which it will deploy its 2nd world cycle of existence in an environment which is open, entropic (1- $\infty$  hyperbolic unbounded Cartesian plane in jlogic mathematics; thermodynamic entropic statistical molecular populations in physics; Darwinian struggle between populations in biology; idol-ogic dog-eat-dog capitalist, nationalist competitive eco(nomic)systems in the super organisms of history. In this 1- $\infty$  existence the world cycle is not ensured to continue, as the entropy of the world system can cut it off.

**w: The existential life cycle**, though is part of a larger world of hierarchical social scales ( $\S D_i$ ), where it performs 5 survival actions through  $\Delta\pm 4$  Planes self-centered in its mind, beyond which it cannot longer perceive, to become if successful a new superorganism of the infinite planes of God, the game of existence.

In graph, physical, biologic & social worldcycles show to which extent 5D laws enlighten our understanding of reality. Matter States are physical time ages, from left pure solid, crystal,  $\S$ top state, to an even more solid  $\Delta+1$  boson condensate, etc. We see that systems either move a step at a time within a plane of existence (gas, liquid, solid) or they can jump « two states at once, (as in the case sublimation) within that plane, or most often between two planes, as in « scattering & entropic death), to become a different Dimotional state. We can then see how the fundamental elements of 5D time appear on the graph: the worldcycle is local and complete. There are 2 inverse arrows from an entropic past (plasma), in a lower plane (ion particles) to the 3 ages of the matter states with increasing form (gas to solid), to end in a higher plane of existence as a boson-Einstein condensate. Do those worldcycles happen for the whole Universe? (cyclic big-bang). Unlkely...

**RECAP.** Time is cyclical as all clocks of time return to its point of origin, so all time cycles including those of life of its vital space-time beings are finite. Further on those time cycles break 'space' into inner and outer parts, so vital space is broken by the membranes and angular momentums of those time cycles that make spacetime beings also finite in spatial information. And an obvious experimental facts about timespace: cycles of time, vital spaces and the species made of them, co-exist in several scales of relative size from particles to galaxies, each one with clocks of time of different speeds. So spacetime is fractal broken in scales that added create a new 5<sup>th</sup> dimension of spacetime.

The dual functions of 5D Absolute Relativity, the function of 5D scales,  $SxT=C$  & the function of equality between form and motion,  $SI=TE$ , develops in 3 ages with 3 standing points, a max. point of existence,  $S_i=Te$  or mature age, a young age of Max. T=motion, and an old age of Max.S=information; between birth in  $\Delta-1$  Form & T-entropic death. The search for space-time, Energy=information balances in a classic reproductive age of conserved time is thus the goal of all existjences, but only the whole achieves the immortality of time-space, as we shall see egocy errors of fractal mind-points of space trying to stop the flow of time from a single selfish

point of view, accelerates the imbalance that brings death equations. We are richer in our still property at that OT-moment, when all is quiet so for time to keep moving, a reversal of entropy takes place.

### **Culture in science: æntropic man projects its big-bang limits on the immortal $\infty$ cosmos**

We have placed on the bottom of the trinity ages of organic species of the Universe the bigbang, but we shall prove ad nauseam that the 'death of the Universe' is not an event experimentally sound, but rather a hyperbolic expansion of egocy (humind's ego=idiocy) and a biased deformation of our military culture, as indeed science is culture and our dominant western military culture loves 'entropic theories of reality. To understand the falsehood of such entropic theories we need to understand the 3 relative paths any system have to choose its future, the reader should be aware that the Big Bang theory merely expands one of the 3 obvious arrows of space-time in matter, that of entropic gas where it was discovered, disregarding completely the arrows of inverse information (solid crystals, informative galactic vortices, perceptive species) and its balanced liquid states (body-waves), in all scales of reality - even IN THEORY of information, they disregard the message content and the emitter analyzing only its lineal transmission and noise; evidently due to the worldly religion of physicists who invented those cosmogonies - to make entropic weapons and transport machines. Then a computer rigged simulation will look make pictures of the supposed Universe with a single time.

Modern Physicists' interpretation of physical facts and equations is biased by their historic culture, Military Germany of worship of weapons and entropy=death, so they denied the arrow of 'crystal=solid' information and Einstein's/Gödel's cyclical, big-crunch solutions happening in thermodynamic matter and cosmological galaxies, where we LIVE dominated by evolution NOT entropy, which balance the gaseous and vacuum space expansion, in reproductive liquid and steady state immortal 'present' systems. As time went by since most humans are memorial believers those sided theories of reality became dogma, and today in an age of increasing mental devolution as humans are substituted by thinking machines, mankind just repeats its model errors, spread also into social sciences and biology, always in favor of the arrow of death.

*In the graph a critical assessment of the methods of 'naïve, digital reductionism' that physicists have used more or less consciously to establish a 'way to model science' only with digital equations and a 'cosmic censorship' on the 4 dimotions of time that do not fit earlier Galilean->Newtonian lineal absolutist time views in a single continuum Cartesian space. Space is scalar, fractal, broken in infinite different 'scalar sizes' which 'co-exist' together and for that reason there are 'organisms' and the Universe has an organic fractal structure, as systems change energy and information between those different sizes and scales, that put together form the 5th Dimension of the scalar Universe, ruled by a simple metric equation: the smaller a system is the faster it turns its time cycles, or clocks that carry in the frequency and form of its systems, its information - the missing dimension of time in all lineal theories of the universe.*

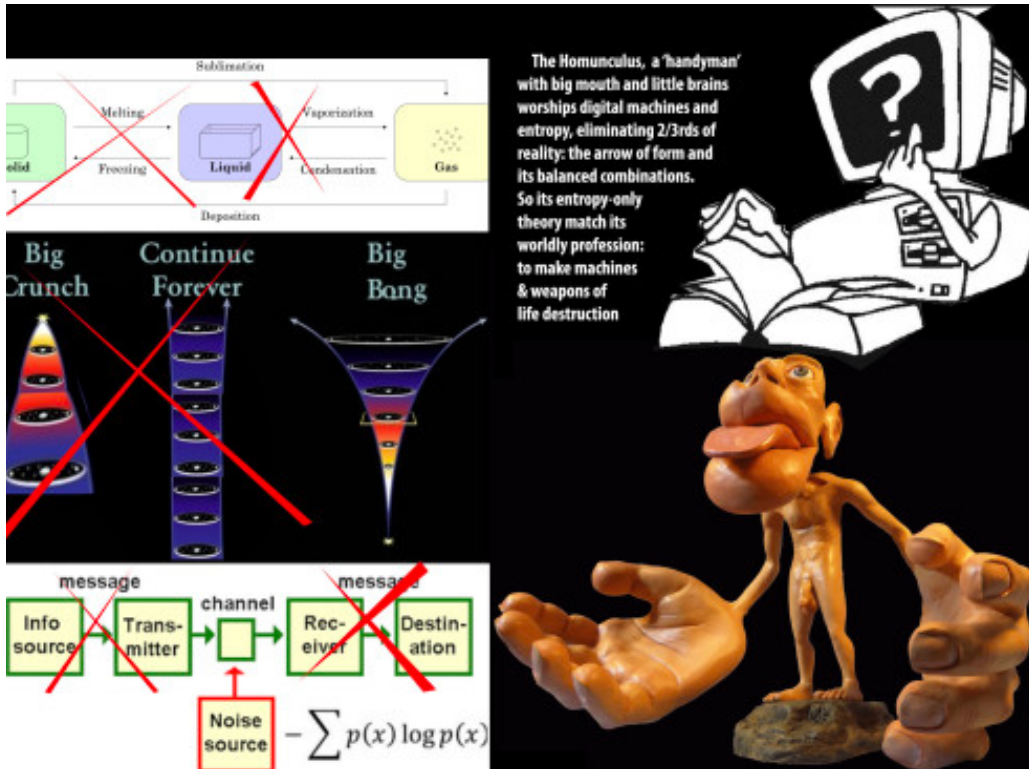
It is difficult to understand how Physicists so dexterous building machines=weapons are so dumb interpreting reality, blind to 2/3rds of the states of spacetime, and to all its non-mathematical properties unless we acknowledge that the human being is less a thinker than an enzyman, ensembling machines, manipulating reality with it and tailoring their models of its world to its worldly profession, which in physics has been traditionally to make entropic weapons and moving mechanisms. Hence its philosophy of reality based in entropy and mechanism. In the graph, the rejection of all other arrows of Time=Dimotions in thermodynamics, cosmology and information theory, which only studies the 'motion of information', and its noise without caring for the form of the message, its emitter and receiver. This would be in physics the equivalent of ignoring the Fermions that emit a boson and merely study the space in which the boson moves. And indeed, cosmology is built ignoring the galaxies, space-time vortices of information, which do NOT expand, and just contracting the vacuum space between them to get into the 'magic singularity' from where all came from.

This paper leaves aside the 'worldly' religion of physicists, as 'I do only thought experiments' (Einstein), and so we build an epistemologically correct model with the same data, but *without* the bias of Egos and worldly religions for each 'stience'.

Now even before we advance further in the model of the Universe as it is, we must explain in detail the previous graph, and add ALL the local arrows of time-space that in the fractal Universe are LOCAL, for each of its species, and define the existence of all of them.

Thus we add the inverse arrow of entropy which is information, dominant in this planet, as it is represented NOT by the vacuum space expanding between galaxies but by the vortex of galactic form, of in-form-ation that evolves entropy into matter, in which we reside - reason why this planet is *dominated* by information. Incidentally Duality was the science I r=evolved in the milieu of systems sciences, whose chair I hold during my active years in congresses at the International Systems sciences society at the turn of the century.

The science of duality is important because only a proper model of duality (not to confuse with dualism, the philosophical doctrine of mind and body), that is a proper understanding of the interaction of entropy and information, can give us the proper philosophy of science required to understand the Universe as a whole and all its disciplines, those specialized in information as biology and sociology is, and those specialized in entropy as physics is.



The Homunculus, a 'handyman' with big mouth and little brains worships digital machines and entropy, eliminating 2/3rds of reality: the arrow of form and its balanced combinations. So its entropy-only theory match its worldly profession: to make machines & weapons of life destruction

The distinction between entropy sciences and information sciences however *is not one of Nature, but one of huminds (ab. human minds), of historic and realpolitiks (power) NOT of reason and scientific laws. And to prove the case we can consider the side of 'physicists' (rather than physics) and how they stubbornly since the inception of their discipline have DENIED the existence of an arrow of information in the Universe.*

*Lineal Inertia, Entropy and big-bang's reductionism.*

This physicists have always denied due to historic reasons, as the oldest science which started with the study of military weapons (Galileo was an artillery master at

the Venice arsenal), and developed a theory of the Universe based only in 'the science of motion' (the definition of the discipline in classic encyclopedia). So his job was to study how to reach maximal distance with cannonballs and for that reason he defined 'lineal inertia' - the conservation of lineal motion; *but declined to consider the existence of its opposite informative arrow, the conservation of cyclical inertia, angular momentum, as a clear balancing second arrow of time that gives 'form' to all 'forms' of Nature.*

Physicists however follow their routines and so again in the XIX c. they chose 'entropy', the disordered state of matter, called 'gas', in the study of motion machines and weapons (heat in cannons; steam studies) to cast an absurd 'law' according to which all systems are 'gaseous=entropic' and die in the future; shunning off the

obvious fact that there is *an inverse* arrow of time in matter, called 'cold'. And so when entropy ceases the system reverses its arrow of time into coldness and then creates crystals that reproduce information.

Then in the XX century, they again took their bias to 'cosmic hyperbole', when Einstein's Relativity improved upon Galileo's work and stated that 'time curves space into mass'; that is indeed the best definition of the arrow of information in physical systems, as masses and charges ARE curves of spacetime that store in the frequency and form of its cycles the information of the Universe. And so galaxies are vortices of timespace mass that 'shrink' and 'warp' the expansive, entropic space between galaxies to balance the Universe.

But NONE of this was considered when a cosmology came out of Einstein's Equations (ab. EFE). Instead, of the 3 solutions or 'ages' of a space-time 'world cycle' of physical matter, the entropic big-bang solution/age, the steady state solution/age and the collapsing informative solution/age, two were discharged, as well as the implosive, informative behavior of galaxies, even if we humans lived in one of them; and so once discharged the 'in-formative' gravitational force that brings radiation and mass into cyclical informative patterns, the 'big-bang entropy-only' theory of the Universe became the dogma/religion of physicists, and by extension given the technological, machine-driven civilization we live in, of all mankind.

Fact is Einstein's equation,  $E \Leftrightarrow M(c^2)$ , is a feedback equation that reproduces mass/information from entropy/energy and vice versa. In fact Einstein's first calculated it in an article about how 'energy can create mass' (so he studied the arrow of information). But it would be only used as a proof of the dominance of entropy and to make atomic bombs.

So again physicists ignored  $\frac{1}{2}$  of the equation as they keep denying cyclical inertia as an arrow of time (angular momentum, orbital electrons, etc.); or denying the cold-crystal arrow of information in matter; now denying the arrow of information in galactic vortices that 'curve vacuum space into mass'.

So when Einstein died, General systems sciences was born at the Macy's congress, where the leading scientists of the age came together trying to add the 'arrow of informative time' to fully account for the Universe as it is, since biological and sociological, human sciences *are based in the arrow of form, of in-form-ation; and the planet Earth exists in a vortex of cyclical 'form', of information, called the Galaxy. So in this region of reality it IS information, NOT entropy what dominates reality.*

But that didn't change the attitude of physicists and society who had them as the 'new seers of time', the popes of creationism ('God is the seer of time' had said Augustine), mostly because they didn't understand the mathematics they used to mirror those laws of entropy in physical space.

So finally in the post-war age, as computers and other informative machines developed, physicists had to deal with 'form', in-form-ation, logic languages and its cyclical logic clocks. But amazingly enough they *manage again to deny the formal, linguistic nature of information.* So when it came into the study of information, physicists 'reduced' the concept either to its 'motion' (transmission of information, Shannon), or as an 'aberration' called 'negentropy' (the negation of entropy). And again, in a military, western society where believe it or not, the military-industrial complex DOES dominate societies, all was good in the western front. Now physicists had a theory of the Universe based in a 'big-bang explosion', similar to the ones they developed in the Nuclear Industry, and so to develop entropic weapons of mass destruction was suddenly a metaphysical experience.

But reality is dual and hence ternary. So the understanding on how entropy, or pure motion without form, and 'form without motion' (information being form-in-action, form with motion), *as the two limits of reality which combine to create the infinite 'fractal spacetime beings' of energy, we all are made of; cannot be suppressed from the Universe, even if man ignores it or as in physics, studies it in a very convoluted way by lack of clarity in its foundational principles, properly explained for the first time in 5D formalisms.*

Indeed, we cast all phenomena of Nature, with the 5 Dimotions of time of physical matter ( $E=Mj$  in Planck Units, where  $c=1$ ), in simple 'fractal feed-back generator equations', which reduce all what exists to those two arrows and *the ternary balanced equivalent arrow that merges entropy and information and reproduces with them the infinite vital space-time beings of reality, such as:  $S(i) < \approx > T(e)$ ...* becomes the simplest, ternary, logic fractal Generator equation that unifies all sciences and represents in simultaneity the 3 topologies of the Universe (cyclical information, lineal entropy and its hyperbolic combinations), and the 3 different 'ages' of time-motion we observe in all beings, born of an informative seed, which lives through an entropic youth, reproductive age, and informative, warping third age that ends in a reversal of time arrow in an entropic death, which completes the worldcycle of existence of the being.

### The 3 Conserved Quantities Of Physics: Energy, Angular Momentum & Lineal Speed

The 3 conserved quantities of physical systems are the 3 states of spacetime,  $St <Ts>$   $Ts$  dynamic view) or  $St \times Ts = TS$  (entangled view) of 5D metric function in the 3 physical scales of the galaxy, whose metric,  $hxc=k$  sets the final limits of information (h) and motion-distance (C-speed) of the whole. All are relative 'nested scales,' which change as we travel through them the parameter of time (frequency or duration), and entropic motions, giving us 3 constants of scale of space-time, h, m and T through which the actions of its systems are taking place.

Entropy=Energy=max. motion  $\times$  Time frequency/duration become then two limiting barriers, which dissolve the information constant of the being if crossed, disordering and restarting the game with 'fresh' entropic motion between scales. So frequency from the quantum wave collapses into an  $\Delta+1$  particle of the next dimension, which emerges from the 'undistinguishable' use of the energy/entropy of the lower plane.

This implies a finite limit in each plane starting from a first universal constant in space (H-plank uncertainty, first wave frequency mass-particle), and a limiting frequency in time (i.e. beyond 10.000 degrees molecules become plasma and temperature leaves way to frequency; and vice versa, beyond certain frequency waves collapse into particles; again beyond certain mass 'frequency' quarks collapse into heavy quarks and black holes), so near the limits of each nested dual plane,  $\Delta\pm 1$  by an excess of energy or information, the system 'decays or evolves and emerges into a higher 'constant' of an upper or lower plane, crossing a discontinuity that doesn't conserve 1,2,3 D (momenta and energy) transferred between planes.

And we shall call the 'ternary' arrows of time, entropic past, reproductive present that seems not to change and informative future, or 3rd age of maximal warping, which explodes back into entropic death. So the simplest entropic arrow adds in duality form, and both reproduce in energetic, iterative 'present' dynamic combinations.

### Entangling Vital topology and cyclical time: Local Past=Entropy, Present=Iteration & Future=Information

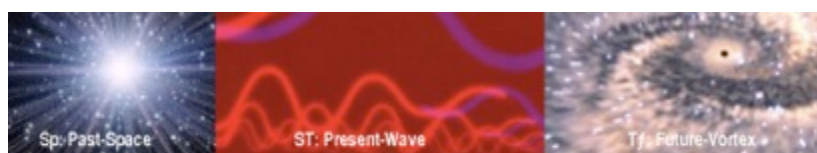
'The separation between past, present and future is an illusion' Einstein

*Of all the consequences of cyclical time, the most important is the existence of infinite local time clocks of which we are all made, which therefore imply the existence of infinite local past, present and future states.*

*Past then means a system with less 'form', less information, which slowly acquires a dimension of height-form, as it completes its cycle to return back in the moment of death to an age of no information. This 'worldcycle' of existence, which creates and erases information becomes then the function of duality:*

Entropy-youth (relative past)  $<$  Energy-mature reproduction (present)  $>$  3<sup>rd</sup> In-Form-ation age (relative future)

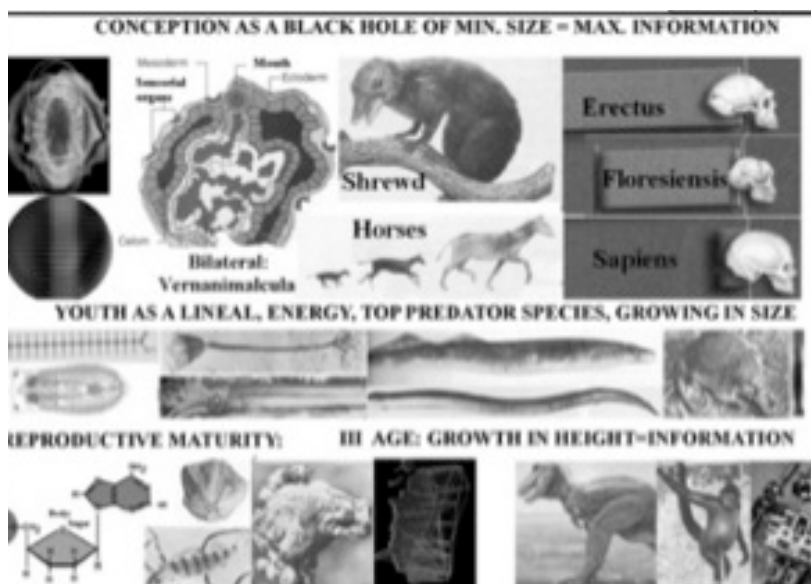
*Which each of us follows as a time-space superorganism. In physics is equivalent to the dual function of Einstein:  $E \Leftrightarrow Mc^2$ , which reverses when  $E$ , which should be properly considered 'Entropy', as it is a disordered state, collapses through gravitation into Mass, a cyclical vortex of space-time; while its intermediate state is  $c^2$ , radiation; the relative present: Whereas the past is the beginning of a pi cycle, starting as a line of entropy with no form that curves and raises in height in its second state of present, and returns back to its origin in its future*



3<sup>rd</sup> age of information, completing a 0-sum of life and death. Thus instead of a single  $\infty$  lineal absolute time there are  $\infty$  living cycles of time happening in zillions of entities.

Those relative time ages for simplest physical organisms not coincidentally are equivalent to the 3 conserved quantities of physics. So as time is cyclical, made of  $3\pi'$  lineal time motions, we shall distinguish 3 conserved 'ages' of timespace that put together create a 0 sum worldcycle of life death for any spacetime organisms: a relative devolving past or arrow of entropy represented in physics by disordered explosions in space and in vital topology by lineal limbs/fields of lineal momentum, an iterative reproductive present that seems not to change, represented by hyperbolic body/waves of energy, and an implosive in-form-ative local future arrow represented in physic by accelerated,  $V(t)R(s)=K$  vortices and angular momentum, and by particle/heads in the ensembles of vital topology. So timespace breaks in  $\infty$  relative local, fractal entropic pasts, iterative energy presents and informative futures, which put together create the illusion of a single timespace continuum.

Species are superorganisms as they go through the same 3 ages and processes of birth, reproductive radiation,



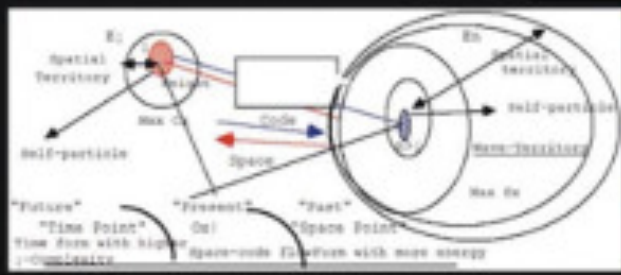
end of growth (mimetic in its log curve to that of cellular growth of an individual) and 3<sup>rd</sup> age of information and extinction or evolution into a social superorganism (ants, humans). An interesting detail of 5D evolution is the St-ST beat between fast evolution in smaller forms (Floresiensis, mole mammal) and ST-radiations of populations as they grow. I.e. the 1<sup>st</sup> human was the maligned dwarf Floresiensis who evolved a head similar to man, spoke, used advanced technology and merged with Erectus to grow mass, spreading in a global radiation to give birth to a dual S-verbal Sapiens+T-visual Neanderthal.

*Survival is a process achieved in the perfect Universe by social love, and reproduction, the higher dimotions of existence, based in information, not by locomotion and entropy=death, reason why we are*

*so harsh in ethic, survival terms with physicists and their worldly religion that prevents them from understanding the ultimate goal of the Universe, a 'field of social love'.*

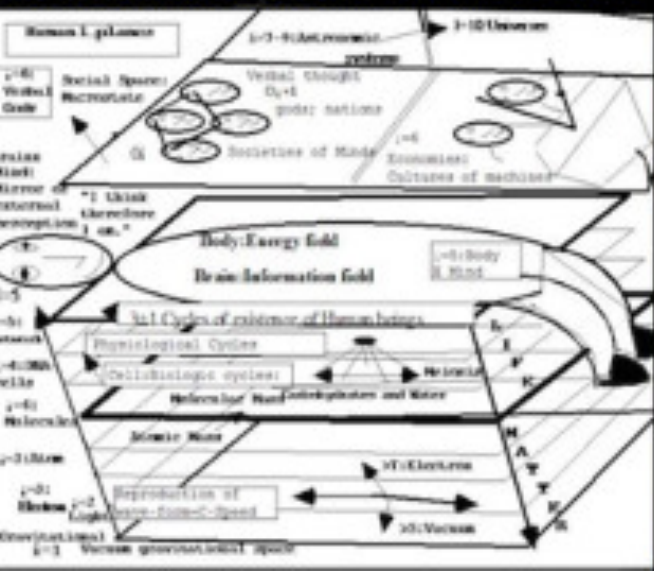
*In the final e-motions associated to the 5 Dimotions of time, those who have experienced the entanglement with the whole of its species – mystique of God – or in a less intense form with the Tao – entanglement with God, know that the lower 'exhilarating' e-motions of speed, the taste of entropic food, the accuse awareness of direct visual perception or digital ones for computers and mathematical or musical brains, pales. And so not only ants and social Chinese survived better, being the two biggest masses of life cells in this planet as superorganisms, but that is the beauty and redemption of the game of existence. Just know I am seeing the largest field of love of this planet's surface, not China, not ants, but the sea of love where Oxygen calms its acidic electronegativity and uses its positive H+ to rub eternally with other Oxygens. It is the 5<sup>th</sup> Dimotional co-existence of such planes, what makes possible for each Dimotion of time, knotted in a point of space, to create a field of e-motions that programs the whole to love existjence per se without further finality. Let us then study those fractal points now in its mathematical abstraction that encodes the laws that apply to physical systems in larger measure, as each particle, unit of reality is a fractal point.*

**1. E: FRACTAL POINTS WITH PARTS. 2 WAVES= FLOWS**

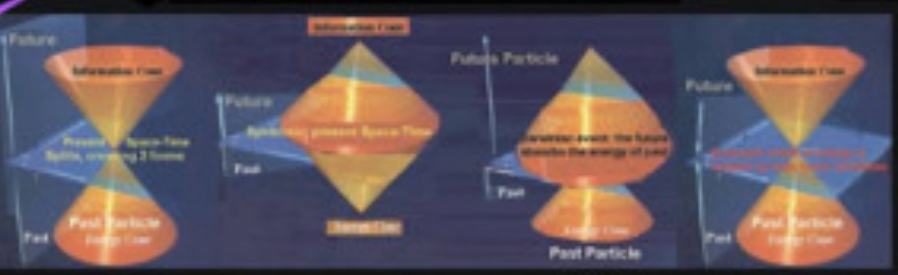


Fractal Points have inner dimensions. They share dual lines-flows of entropy & information with other points, creating organic networks=planes of space-time:

**3. FRACTAL NETWORKS=ORGANIC PLANES & SCALES**



**4. A: SIMILARITY: PARALLELISM VS. PERPENDICULARITY**

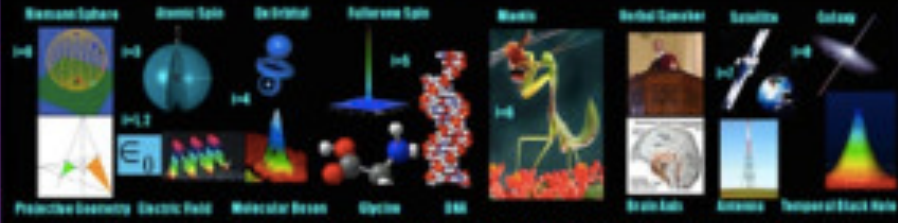


**MOTIONS - ST-BEATS:** Perpendicular exT flows create destructive & hierarchical events. Parallel flows build social networks. The combination of both define the causality of relationships between time-space organisms in all scales of reality.

**MOTIONS- Δ±i beats:** Information grows with time speed in lower scales, making micro-points code with quantum numbers, genes & memes, Δ±1. While the whole enclosed with its @-membran micropoints synchronizing their motions with its elliptic geometry of self-centered antipodal points:

**5. A, I-LOGIC POSTULATES OF ORGANIC GEOMETRY**

**5. Minds: Spheric, Tall 0-points map ∞ Universes into Constant, linguistic Worlds: 0 X ∞ = C**



SENSORY BRAIN SYSTEMS PLACED ON THE CENTER OR HEIGHT OF ANY ORGANISM USE LANGUAGES TO ABSORB I-n PIXELS THAT SCAN THE ENERGY ACTIONS AND TEMPORAL CYCLES OF ITS WORLD RELEVANT TO ITS SURVIVAL:

**THE FRACTAL POINT – NON-EUCLIDEAN GEOMETRY.**

‘I know when mathematics are truth but not when they are real’ ‘I know when physics are real but not when they are truth’. Poincare and Einstein

The existence of a fractal Universe of scales in which each point grows in size as we come closer to it, becoming a fractal point requires a huge uphauling of mathematics we do in the 2 papers on algebra and geometry, to which we refer the serious readers. We shall here just introduce the geometric more intuitive r=evolution, started in the XIX c. as those fractal points crossed by infinite parallels are Euclidean points with ‘breath’:

The 1<sup>st</sup> consequence of the fractal structure of space-time is the change of Euclidean geometry taking the r=evolution performed by Lobachevski and Riemann in the XIX c. which gave birth to Relativity, to its ultimate consequences, changing also the axioms of Euclid that defined points and lines as having no breath, since in the fractal Universe all forms do have a volume when we enlarge our view of them, peering into its inner parts and fractal dimensions. And in this manner we shall harmonize and return to its logic meaning the concepts of parallels and Euclidean points able to fit multiple lines=waves of energy and information, converting those fractal points of ‘cyclical timespace’ into the fundamental particle-units of the Universe mirrored by mathematics. In graph, Einstein's interpretation of the 5th non-Euclidean postulate was the view of a fractal point of the gravitational scale from our smaller electromagnetic world, which shrinks its inner volume, bending its parallels, hence its curved geometry. But that view breaks the conceptual definition of parallels are straight lines and is absurd, as the point remains ‘Euclidean with no breath’, hence only fits one line with no breath. Thus, particle points must be defined as ‘fractal points’, like those we see through telescopes or microscopes, which grow we approach our distance both in scale and space becoming enlarged worlds with a complex internal structure; and a mind @ its center gauging information.

We thus recast the axioms and postulates of Euclid into five new postulates to define fractal points, Non-Æ lines as wave of fractal points, Non-Æ planes as ternary networks of Non-Æ lines, which become supœrganisms, whose relative 'congruence' in its 3 'elements' (singularity point, membrane and vital space) defines the type of 'perpendicular or parallel' relationship between them:

1st Postulate: 'Non-Æ point are discontinuous time cycles with an inner content of vital space-time'.

2nd Postulate: 'Non-Æ lines are waves of fractal points'

3rd Postulate: 'Non-Æ planes join 3 Non-Æ lines into a supœrganism'.

4th Postulate: '2 Non-Æ points are congruent when both its inner parts and outer perimeter are equal'

5th Postulate: 'Non-Æ World points focus multiple Non-Æ waves of energy into a still linguistic mapping of the world.'

So the fractal point is a 5<sup>D</sup> Mind, with the 5<sup>th</sup> non-Euclidean postulate and the only one defined by classic mathematics, in relationship to the external world, and its waves and networks of energy and information that entangle the point with its 5  $\Delta^{\pm 4}$  planes of existence. And in this manner *the inner parts (1<sup>D</sup> postulate) and outer world (5<sup>D</sup> postulate) of Non-E geometry complete a full cycle on the description of a T.Æ in geometric terms.* In the second section of the post we will explore those postulates, constraining our examples to the simplest forms of physical and biologic spaces.

The five postulates of non-Euclidean geometry are in themselves a revolution of mathematical sciences we shall upgrade in our papers on spatial mathematics (geometry) and temporal mathematics (Non-Algebra, or non-Aristotelian algebra of multiple causal time arrows). It is briefly summarized on the top graph. As fractal points grow in volume, they obviously interact (its fundamental difference with Leibnizian monads, which he simplified as black holes of information), and so they form lines of communication, which are in fact waves as they have form and can communicate information, as in the simplest case of the fundamental quantum function of S(fermion) < T-boson > S-fermion. Particles thus move as cycloids do in wave-like forms, (particle-wave complementarity). In fact we shall see they stop to gauge information and move to reproduce it as a wave in 'stœps' (we do change slightly English wording into 'inglish' to convert the more complex new informative words, using combined vowels, or wordings that are dual and read fully as dual words, such as wor(l)d, the world of man spoken in verbal worlds.

Those waves become planes, also defined by 3 different lines, which are now physiological networks. So superorganisms are in fact planes of non-æ topology, whose illogic postulates define relative equality and the type of Darwinian, perpendicular, tearing or parallel social relationships according to what they share, social information or a common energy in predator-prey relationships. So the old 5<sup>th</sup> postulates becomes merely the affirmation as Leibniz did that 'a point is a world in itself', a mind crossed by infinite parallels, as you live in a pan psychic Universe, but we shall see soon, each point-mind distorts reality to stay in its center and denies its inner properties it cannot see directly in other points, to come on top as the game is also vital, selfish...

Mathematics becomes then the most experimental of all sciences as it deals directly with the properties of space, in geometry, of scales, with numbers, and of time, with operands of algebra... But to understand that we have to go deeper in the comprehension of time that the simplex physical view that studies only locomotion and admits only entropy as a time arrow goes.

#### **Euclidean errors creeping in all sciences. Points with volume, finitesimal zeros.**

A few important simplifications we must always have to account in our 'backmind' for the sake of realism are:

- **Points do have parts**, crossed by a relative  $\propto$  number of parallels. And so lines have width, they are waves or fractal networks, and so planes have depth, they are messings of 3 lines which are now topological networks and hence they form a topological organism.



- **As a result of points having parts, absolute zeros does not exist.** There is not absolute no motion but a 0'k temperature of residual motion; there is no absolute emptiness but a finitesimal residual past memory when we take away a corpse with DNA traces in a lower scale. So 0', the finitesimal is always left.

**The solution to those errors are part of the first postulate of Non-euclidean geometry** that describes the parts of points studied in depth in our paper on Geometry.

- As the parts of points are not measured from an outsider cut-off from them, **equality is false, substituted by** relative congruence, similarity, 'indifference', ST-symmetries and trasn-form-ations.

The solution of the problems of equality and transformation of Timespace organisms ab. T.oes into other states is solved in the fourth and 2<sup>nd</sup> postulate that describe the relative congruence between points and the type of lines-waves and networks they create.

- **Because there are 5 dimentional motions of space-time**, simple Aristotelian causality, A->B, is not real. The causality of the Universe is entangled. We do not create a real circle by drawing a line around with a single pen, but rather multiple flows of timespace converge into a point creating a sphere of forces with multiple causality, one for each line of force. The solution of those problems of causality is resolved by the simultaneity of 3 networks that create a plane, which have topological, organic properties according to congruence; hence studied in the 3<sup>rd</sup> and 4<sup>th</sup> postulate of non-euclidean geometry.

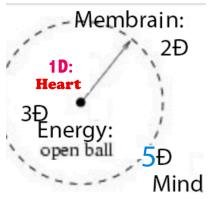
- **The Universe is not a single space-time continuum** of light space, which is what our electronic eyes-minds see, but it is a fractal Universe of multiple scalar planes of space-time, displaced in space and with multiple time clocks. And so continuity does not exist. The real line is NOT in a single plane, but in multiple planes and the discontinuities of natural numbers are filled by decimals of an smaller scale/plane of the fifth dimension and the discontinuities of rational numbers are filled by irrational ones.

As the perception of the continuum is a product of the mind selecting information to form an inner mental space, its solution and study corresponds to the 5<sup>th</sup> postulate that studies fractal points from the subjective inner world of its minds, as opposed to its external description in the first postulate.

Does this means the axiomatic proofs of all those simplifications of mathematics have no use? No. It does mean that they are *creating a similar parallel mirror universe in its simplification that extract properties we must now reapply to the enlarged fractal Universe of multiple scalar planes of space and multiple time space dimensional motions.*

The hypothesis of the continuum is false. Leibniz thought a continuum of numbers was one that could be filled in any interval with as many numbers as we wished – when that is the obvious reason of discontinuity – as there is a hole to fit more numbers. Down the road this ended in Dedekind's cut. The hypothesis of infinity is also wrong. As infinity dissipates into entropy with uncertain information The hypothesis of equality is also wrong, as two fractal points with volume hide information we cannot compare, and entangled to the whole they are dissimilar since a being is part of that whole universe in which its position is different. All those hypothesis however reflect the mind's simplification of reality and so the can be considered right in mental space, of which one of them, is humind's mathematics. It's the mind that creates the illusion of continuity, which places a huge metaphysical question. It is the mind the only continuous for in existence? If so it is the mind immortal in its travel through planes of the fifth dimension, as religious people wishfully think? We will discuss those themes in metaphysical papers. First though we have to define those minds as the 'emergent'  $\Delta+1$  'simultaneous whole' caused by 3 'line-networks' that become a topological organism.

Let us then make a crash course on the 5 Postulates of Non-Aristotelian, Non-Euclidean geometry because they are the basis for a full understanding of the errors of mathematics and its proper realist solutions.



## THE FIFTH AND FIRST POSTULATE.

$\Delta$ ST symbols for 3 conserved timespace topologies=functions=dimensional motions (ab. Dimotions,  $\mathcal{D}$ ) are:

**T>S: angular cyclical motions of information (Ab. O;  $\mathcal{S}\delta$ ):** the minimal 'geometry' of reality, a spherical particle/head or fractal point, the geometry that stores maximal form in minimal space, hence suited for 'organic functions' of gauging, storing and perceiving information (particles, heads).

**S<T: Lineal Locomotions, (Ab. |;  $\mathcal{S}t$ ),** which will move through its lineal limbs/fields the system, as the line is the shortest distance between two points... towards a...

**S=T: Fields of vital Energy (Ab.  $\emptyset$ ):** with its hyperbolic body-waves that iterate the forms of both the spherical particle/heads and lineal limbs/fields; as the hyperbolic topology combines the other two, so it can generate them, in the same manner Energy adds as the third conserved space-time quantity the lineal and cyclical momentum of 1 and 2D.

*So conservation laws define the 3 quantities conserved as time ages, which in space appear as the 3 components of all 'particles' and 'physical waves': Lineal x Cyclical momentum = Present energy.*

So when we put together those 3 elements into an 'organic whole' as in the right graph above, it is easy to see, they form a structure with a central active magnitude that commands the lineal motion of the system (Center of mass or charge), a clock-like membrane of cyclical motion, and a vital energy enclosed between both, which we can measure by its radius-width.

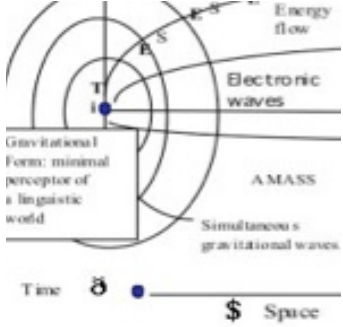
The 3 parts of any organism define also its mathematical unit, the fractal Non-Euclidean point with breath, as it fits multiple parallels, *when we come closer to it and enlarge its perception at the proper scale of the fifth dimension in which it maximizes its existence.*

But we must add to the 3 canonical dimensions of space in a single plane of reality, now gifted with motion, hence 'dimensional motions' or dimotions; the fractal structure of the Universe in scales, which means to add two new dimensions. The canonical dimensional motion (ab. Dimotion) of entropic dissolution and death proper of classic physics – arrow of time, and the inverse dimensional motion of parts that become wholes, of social evolution, of growth of information, as those parts emerge into a whole. We shall call this Dimotion, the most important of the Universe, the dimotion of social evolution, of love. As all languages, mirrors of reality not only mathematics reflect the  $3\pm j$  Topological Dimotions that make all its organic systems – the 3 'dimotions' or topological varieties we observe in a single plane, which shape its organs – simplified in Euclidean mathematics, into height, the dimension of information (so all formal minds are on top of the system from heads to antennae, to particles in waves – photons, quantum realism); length, the dimension of locomotion, so faster systems are 'lines', planes and TGVs and light rays, and the dimension of iteration, reproduction; so body-waves have a width dimension.

While the other 2 dimotions of evolution of parts into whole 'upwards', (ab.  $\Delta+1$ , SS) and the dimotion of dissolution of wholes into networks or entropy, (ab.  $\Delta-1$ , TT) are also topological dimotions. Since in fact modern topology considers its 'varieties of form', networks of points, which are defined by its 'adjacency' and proximity. So truly the world is made of topological organisms

Entropy is motion=time=change. Information is form and form is dimensional space. Time=motion and Space=dimensional form become then the two substances of which all what exists is made, and in their analysis we must start our inquire about why indeed the Universe and all its parts are a fractal super organism of time=motion=entropy and space=form, made to the image of its whole. The proofs? Look around. All what you see are forms that occupy space and move in temporal energy. Everything is a space form with a time motion. There is nothing else. So all is a proof that reality is indeed made of space-time organisms.

**The parts of the point.**



‘Every point is a world in itself’ Leibniz, on the fractal point, Non-E unit of logic geometry

Let us then study in depth the vital geometry, organic networks and mental properties derived necessarily of fractal scales of space, cyclical nature of time and organic co-existing 5D planes with the formalism of Non-Euclidean geometry and its fundamental particle, the fractal point.

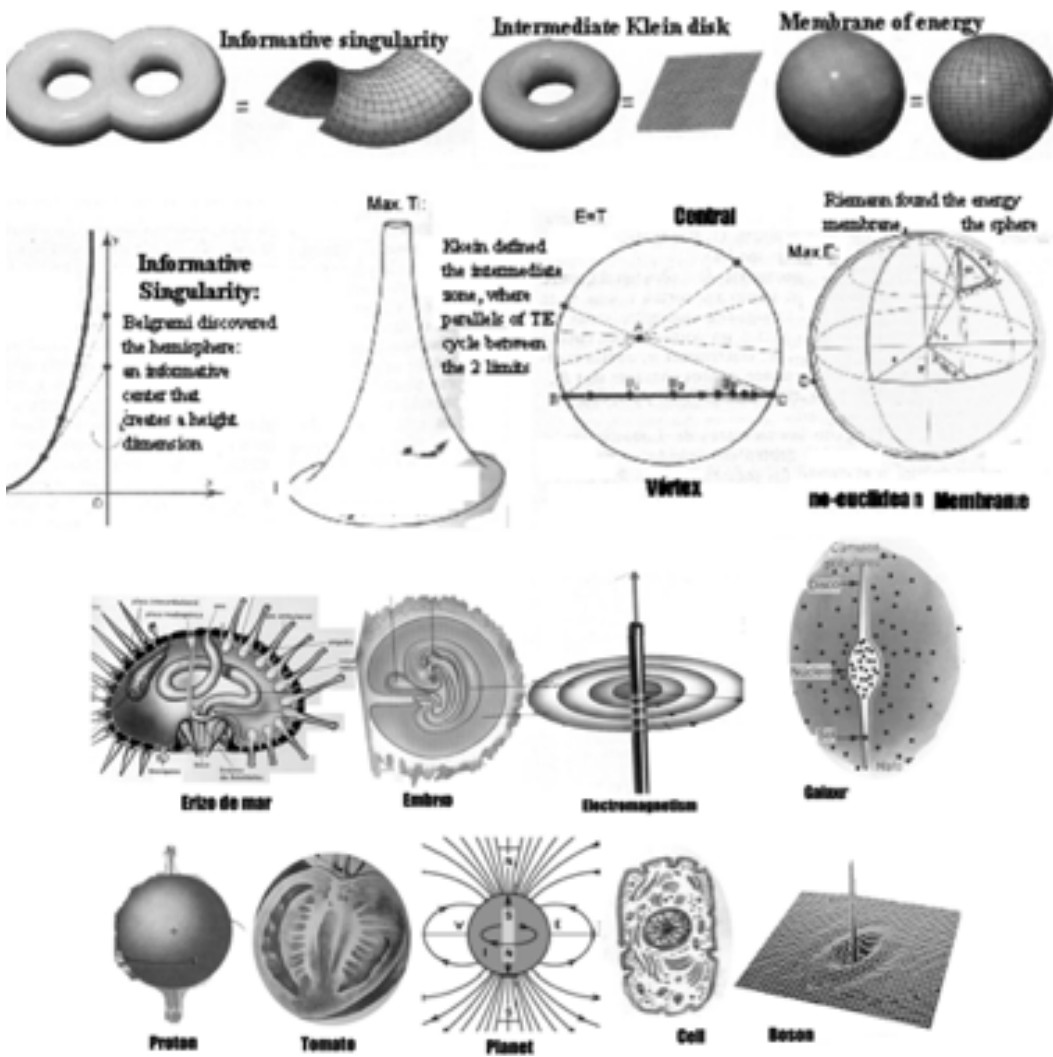
**1<sup>st</sup> Postulate:** A fractal point has parts; that is an enclosed region of vital inner energy surrounded either by a spatial still membrane or a Temporal motion of angular momentum (Si=Te symmetry) self-centered in a singularity-mind that gauges its information. In the graph, we can see how different vital fractal points of scientific scales follow this ternary structure. The perception of the point depends on the scale and distance from where we observe it:

From the perspective of the upper st+1 Plane they might be in the limit of invisibility (what quantum scientists call a point-particle) *but they still have a time motion performing a ‘function’ in that upper ecosystem, Δ+1 in which it exists.*

*Internally from its own Δ<sup>0</sup> perspective the point will have 3 dimensions/networks.* This is the case even in the smallest planes of theoretical strings, made of points with parts, with volume – since we require 3x3Δ<sup>0</sup>+1Δ+1 inner dimensions to describe strings - a paradox that can only be resolved if we consider ‘strings’ to be fractal points with inner dimensions.

Fractal points explain without contradictions Non-Euclidean points, which are not logic in a single scale, as they ‘curve’ parallels which are ‘straight lines’ and fit them in a ‘point with no breath’ that holds only 1 line. Fractal points however enlarge fitting multiple ‘straight lines’. Yet when seen from above, human perception of them, becomes ‘deformed’ shrinking and curving its from – a theme, the distortion of human measures of time, space

and scale, which will be instrumental to explain rationally the ‘spookiness’ of quantum physics and relativity and its time and space transformations.



So fractal points harmonize the 1<sup>st</sup> axiom=postulate of Euclid with the 5<sup>th</sup> postulate of non-Euclidean parallels, as a fractal point enlarges into a cell, atom or particle which even in a smaller scale of the fifth dimension can host multiple parallel flows of energy and information, crossing it.

When we see fractal points far away we describe them as points with breath, with the tools of Euclidean geometry since the ‘inner space’ shrinks to a point and so the ‘bulk’ or curvature of space-time shrinks to a plane. Yet, when we come

closer to them, they grow into points with volume. The volume of those Fractal, Non-Euclidean points can thereafter be studied with the 3 types of canonical, Non-Euclidean geometries or topologies of a 4-Dimensional Universe – the Universe we live in. Those 3 topologies make up the 3 regions of the point, which correspond each one to the 3 essential arrows/functions of any species: the external, energetic membrane; the central, informative brain and its reproductive combination,  $S \times T (s=t)$ :

*Any fractal point is made of 3 regions whose geometry responds to the 3 topological forms of a 4-Dimensional Universe, the convex plane, the torus and the sphere.* The inner parts of fractal points are thus able to perform energetic, informative and reproductive functions, which makes them the fundamental particle of any plane of stience. Thus all entities can be described as wholes made of 3 internal parts whose geometrical properties maximize their energetic, informative and reproductive functions:

- Max S: an inner, dual center, corresponding to convex topologies (left), made with 2 cyclical forms. It is the dominant informative topology of any fractal organism, described by Belgrami in the XIX c. as a conical form with 'height', with negative curvature.
- $S \rightleftharpoons T$ : A middle, reproductive zone, described by Klein as a disk of quanta in cyclical motion that communicate energy and information between the inner and outer zones.
- Max. T: An outer membrane of max. | -motion-distance crossed by  $-E$  information & energy parallels acts as an entropic limit to its inner parts, described by Riemann's spherical geometry. It seems continuous, still but on close view, as most external membranes stores and/or absorb information through openings of its broken geometry, outlets of its senses.

The complex analysis of those fractal points that move and have inner fractal parts, made of cycles, started in the XIX century. First Lobachevski, a Russian geometrician, defined Non-Euclidean points as curved forms, crossed by multiple lines, which give them spatial volume. Then Klein studied its cyclical movement and introduced the variable of time in their description. Finally Riemann generalized its nature, considering that all space-times were Non-Euclidean space-times with movement. For readers versed in mathematics, we shall reconsider the common properties of those 3 zones of any fractal point, according to its discoverers, which develop in abstract terms the organic properties we just described:

- *According to Lobachevski and Belgrami*, space is curved since information curves the energy of any real spacetime. So points move in curved, cyclical paths gathering energy and information for their inner 'dimensional networks'.
- *According to Klein* Non-Euclidean space-times have motion. So their speeds measure distances; as physicists do in Cosmology with the distances of galaxies, which are proportional by a 'Hubble constant' to their speeds; or as people do in real life when we say that Brooklyn is at 5 minutes by train from Manhattan not at 2 miles.
- *Riemann* summoned up those findings and generalized them to all possible space-times. His work should be the guide to understand them philosophically. He also defined planes as networks of similar points and treated dimensions, as we do in this work, no longer as mere abstract definitions of extensions but as 'properties of those points'. So points can have beyond its discontinuous borders an inner space-time with several networks/dimensions, one for each of its 'energetic or informative properties', as it happens with the points of physical reality. Yet a network of points that form a space with 'common properties' defines the dimensions of those points as 'fractal dimensions', limited by the extension of the energy or informative network (static point of view), which 'puts together' a complementary dual, organic being.

Those pioneers defined the 3 topologies of information, energy and reproduction of all st-points:

- *Max. Space=Information: The informative, fractal center, particle or brain of the point is the so-called Belgrami hemisphere*, a space-time with a dimension of height that transforms energy into information, absorbed or

emitted by the central singularity. It is a fractal, informative region similar to a black hole structure. Since it follows the 'black hole paradox' of all informative centers, displaying max. form in min. spatial information. So according to the inverse properties of space and time, the center has max. Informative Time and minimal Energetic Spatial information. Moreover any point, which comes closer to it, suffers a mutation of its spatial coordinates into informative, height dimensions. This is the case of any particle coming to a black hole, whose space-dimensions become temporal/informative dimensions as it rises in height.

The center has more information because its geometry has at least 2 fractal disks, which channel and transform the energy absorbed through the surface into complex information. Regardless of the complexity of the entity, the structural function of the hyperbolic center as a system that process the information of the network remains. For example, in living systems, those disks might evolve its topology till becoming the relative energy center or 'heart' of the blood network with 4 divisions; or evolve further its hyperbolic geometry till becoming the informative center or 'brain' of the system, attached to the informative network.

- *Max. Time=Lineal motion & Min. Curvature: An external, continuous membrane or Riemann's sphere of maximal energy* that acts as a relative infinite, unreachable distance. The membrane isolates the point as an island Universe, creating the discontinuity between the inner parts of the point and the outer universe. Since the internal cellular points are either jailed by the membrane's structural density or destroyed by its energy when touching it. The membrane is the opposite form to the central, informative singularity, with max. spatial extension and continuity, hence with a minimal number of fractal, discreet elements: *Max.T=Min.S*

Thus *all Fractal points have inner worlds whose membrane creates a discontinuity that defines an External Universe or outer world* from where the point obtains its energy and information. The membrane is also the zone through which the point reproduces & emits its micro-forms of information. So it displays 'sensorial holes' to relate the point to the external Universe. And those points, despite being discontinuous, will have in their external membrane several generic openings or 'senses' joined to the informative networks or 'brains' and energetic, 'digestive networks' of the organic system:

- *Max. + $\Sigma T$ : A 'mouth' or opening that absorbs energy.*

-*Max. - $\Sigma T$ : 'Cloacae', through which the cyclical body expels its temporal energy.*

-*Max. + $S_i$ : An 'eye' through which the informative center receives external information.*

-*Max. - $T_i$ : An 'antenna' to emit information.*

Those apertures vary in their number, location and size, depending on the form of the point. In the simplest spherical 'seeds' of most species, they are mostly situated in 3 regions:

- *Max.  $\Sigma T$ : The Equator of the system, through which the membrane absorbs energy.*

-  *$\Sigma T=S_i$ : The Tropics where often the same opening emits and absorbs temporal energy.*

- *Max.  $S_i$ : The Poles or points of confluence between the membrane and its central informative region of height, which hits perpendicularly the membrane on those poles. North and South Poles orientate Anti-symmetrically, acting as 2 relative, negative and positive apertures, communicated by the height dimension of the singularity or Belgrami hemisphere. Thus the Positive Pole absorbs temporal energy that crosses through the central singularity where it is absorbed and ejected to the intermediate region where it is re-elaborated before its emission through the negative Pole.*

-  *$\Sigma T_e \Leftrightarrow S_i$ : The reproductive, central region, which combines Energy and Information:*

In all fractal points there is an inner middle volume or intermediate territory, which combines the energy coming out of the external, spherical, topological membrane and the information provided by the convex, complex formal center.

According to  $-E$  this region is made of self-similar points that form groups, fractal herds of 'points with parts' in perpetual movement, that draw cycles of parallel lines, between the other 2 regions, as they gather the energy and information they need to survive. And they create space by cycling within the other 2 regions.

In many fractal points the informative and energetic centers establish 2 opposite flows of energy and information that become the negative/ positive poles. So often, the particles of the intermediate region cycle around the inner region tracing elliptical trajectories, focused by those 2 informative points. It is the case of any bipolar system, from binary stars, one dominant in energy and the other an informative neutron star or black hole; to bimolecular systems or n-p pairs in the nuclei of atoms. The same duality of 2 specialized centers controlling a common territory, or vital space happens in biology where most species have male-energetic and female-informative genders, ruling a common territory.

Such abstract conceptual space describes the behavior and form of many real, spatial herds. I.e., an animal herd in an ecosystem will move between their hunting and water fields (where they gather energy) and their breeding, inner region where they reproduce information, making cyclical trajectories between both regions. In this manner, they occupy a vital space, called a 'territory', which shows the properties of a Non-Euclidean Klein spatial information. A fundamental property of the intermediate space is the fact that it is confined between the other 2 regions, which are never reached in the cyclical trajectories of the inner cells of the spatial information. For example, in a cell, the molecules of the organism will not touch the protein membrane or the central DNA nuclei. Thus, the inner quanta are confined within the Klein's disk by the 2 other regions, which have more energy and information and might destroy them and/or absorb their energy and information at will.

In abstract terms, mathematicians introduced in the XIX c. the concept of an *infinite, relative distance* measured no longer in terms of static space but in terms of time and movement, as *the distance between the point and a region that cannot be reached*. Thus Klein defines a relative infinity, as the region beyond the discontinuous membrane whose insurmountable borders the inner time-space quanta can't cross, as a cell cannot go out of a body, an atom beyond C speed or 0 K temperature and a man beyond the Earth's atmosphere. Thus, the informative center and external membrane become the 2 relative infinities or limits that the movements of the intermediate point cannot breach.

As in the myth of Achilles and the turtle, Achilles never arrives because every time he moves he crosses a smaller spatial distance. The same happens in a fractal space-time, when a point moves *temporally* towards its inner or outer space-time limit and finds an increasing resistance to its movement, till finally it is deviated into a cyclical trajectory around the outer, energetic membrane or the height dimension of the inner informative singularity or is destroyed. So the intermediate, fractal cells of the point circulate in parallel cycles always inside the interior of the sphere with contact zones of the type A (*central, figures in graph*).

*In a human organism, the blood system might seem infinite for the red cells that transport energy since they never reach the outer Universe.* For that reason in the drawing, Klein interprets the intermediate region of the Non-Euclidean point as an infinite *circle with an invisible, unreachable membrane*, whose motion-distance is unreachable, hence infinite, equaling the 'space-time distance' between the intervals B1-B2 (long) and B2-B3 (short but difficult to cross), despite being B2-B3 increasingly shorter in spatial information. Since the quanta take longer in each step and don't reach the membrane. This is often due to an increase in the 'density' of the space, which despite having less distance has more 'points' in its network, such as the case of black holes or jails. When those inner points reach the membrane at point C they become destroyed or deviated.

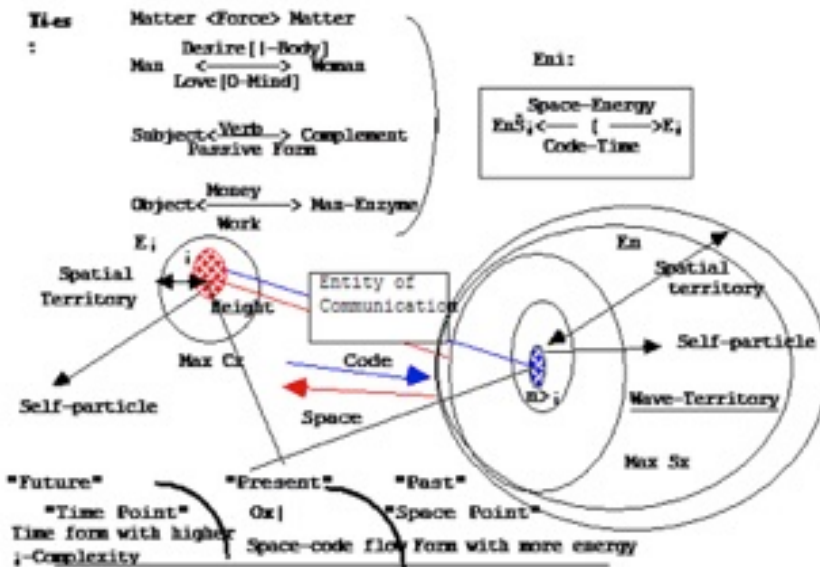
Thus, the entropic membrane and informative center are discontinuities that isolate the intermediate cellular quanta, creating a territorial 'World' within the point. Those discontinuities are called in Geometry a relative infinite, in Biology a membrane, in Sociology or Topology a national border, in fractal theory a co-dimension of a point. *A key advance of  $-E$  is – given the fact that all points have dimension and volume, to define 0 as a finitesimal 0'. Indeed, absolute zero does not exist, it always leaves a finitesimal 0' motion. Emptiness is*

undefined. What was there leaves a memory of it - a corpse removed leaves a DNA trace. Ideal mathematics tries to be a perfect mirror of an imperfect Universe. Yet those imperfections properly explained are absolutely essential to the fabric of reality as it is, helping enormously the 'real modeling' of mathematical structures.

$O'$  and  $-$  motion/mass will help then to understand Lorenz Transformations, the  $c$ -the limit of energetic speed and  $O'$   $k$  limit of temporal, formal stillness, as relative 'scalar' limits of the Universe - the limits of the fractal space-time membrane of light and its evolved electroweak T.oes. Since the Universe has at least another bigger gravitational membrane, in which smaller  $>c$  particles cooler than  $O'$   $K$  (tachyon neutrinos as gravitons?) -exists; in a Cosmos of  $\infty$  scales, which extend beyond human limits of perception.

**Recap:** fractal points topologies are organic, maximizing its energetic, reproductive & informative dimotions.

**2<sup>ND</sup> POSTULATE. COMMUNICATIVE WAVES & NETWORKS OF ENERGY AND INFORMATION. STØEPS.**



The 2<sup>nd</sup> postulate defines lines as waves of points with volume (which explain complementarity wave particle), no longer as an abstract form like Euclidean geometry does, but as a physical wave of self-similar, fractal micro-points that carry energy and information, as they move between 2 macroscopic points, with 2 possible functions, to communicate energetic forces or linguistic information.

*2<sup>nd</sup> Postulate: A cycle of fractal space-time: 'A wave of communication is a group of self-similar micro-points that move in parallel lines between 2 macro-points, transferring energy and information between them'.*

In Non-E geometry a line with parts is not defined by a sequence of numeric intervals

within a straight line, but by the communication of 2 poles of energy and information that establish a flow of particles in 2 opposite directions, creating a simultaneous, paradoxical wave. Such waves again can have different purposes. A wave dominant in information communicates symbiotic particles, creating an informative bondage/network; a wave dominant in energy might be an aggressive action between different species that fight for each other's vital energy or territorial space; and a wave that balances the energy and information of both points meets in the center, creating a new self-similar, seminal particle, as when 2 electrons emit waves of densely packed photons, which merge in the middle and give birth to another wave.

When we observe a one-dimensional line as a form with inner parts it becomes then a 4-dimensional wave made of cyclical points with motion. Hence in quantum theory we say that any particle in motion has associated a wave. Thus the 2<sup>nd</sup> postulate resolves the wave/particle duality, as all lines are now waves traced by a point with inner volume. Further on, since all lines have volume, they carry information and so all forces can in fact act both as a source of energy and as a language of information - as physical experiments prove. Since when we observe a ray of light in detail it becomes a 4-dimensional wave with electric height and magnetic width, often exchanging flows of energy and information in action-reaction processes of communication between bigger points.

When we generalize those concepts to  $n$ -points we can define a space as a network of Non-Euclidean points. Indeed, Riemann affirmed that a space is a network made of herds of points with similar 'properties'. Planes of space are therefore networks of points. The self-similarity of their properties defines its *density* determined by

the number of points and its proximity that grows with self-similarity. So similar points come together into a tighter, more continuous space; whereas the density of the space is proportional to the similarity of its points, till reaching 'boson state' of maximal density when points are equal. And when a volume of spatial energy is very dense, it is very difficult to go through it, as it happens in the ultra-dense, small space of black holes.

Spatial extension and form/density/mass are inverse parameters, Max. T = Min. S. If we generalize that property to all scales, we can define different fractal spaces by its proportion of mass/density and energy /distance. This is done with 'Universal constants' that explain the proportions of energy and information of those spaces.

For example, in physical scales, there are 4 fundamental space-times, the gravitational space-time between galaxies of max. energetic space and minimal formal density; the light space-time of our world, which carries information in the frequency of the wave; the electronic space-time of atoms with more formal density and lesser spatial speed and finally the quark-gluon liquid of atomic nuclei and probably black holes, with maximal density and minimal spatial information. All of them are defined by Universal constants and functions that are either ratios between the energy and form of those space-times, or define the transformations of one space-time into the others. Einstein's field functions would be the first case, defining the relationship between energy and mass in a gravitational space, while the fine constant of electromagnetism would define the transformation between light space and electronic space/ charge; and the gravitational constant between gravitational space-time and quark/mass. Where the relative densities of information and extension in space of those space-times are in balance, such as  $\Sigma T \times S_i = K$ . Thus electrons move slower than light but have more density.

All this said it is thus obvious that the *fundamental unit defined by the 2<sup>nd</sup> postulate is no longer a point but an action,  $T \times S_i = k$  between points, a dimotion.*

## **2<sup>nd</sup> postulate in physics $S_i = T_e$ : T-Wave motion and S-particle information.**

Form=space and Motion=Time manifest in physics as particles and waves: the wave erases form into motion, the particle is a still state that gauges information entangled to other particle, fermion and boson, still to each other – despite the perception of relative motion in our scale – hence the information electrons share has always a c-constant speed. This is the rational 5D explanation of both the c-constant of light and entanglement; as electronic beings perceive information in stop position to each other and move in wave state:

Motions are perceived by particles that stop motion into form, into information, as distances. In terms of fractal reproduction of information we can define motion as the reproduction of form, between those 2 scales: when the particle moves dissolves into its  $\Delta-1$  parts as a wave that imprints an  $\Delta-2$  potential field, with its  $\Delta-1$  wave form and stops to become a 'tight' Particle state that 'gauges' information, form in stillness

*Galilean relativity was ill-understood, as the true question about time-change was why 'we see systems still when they move', and 'why we see space as continuum, when in detail is made of quanta', and why all systems are made of smaller self-similar systems. So there is NOT really a Dimension of pure spatial form or a pure time motion but a combination of both, even if mentally we tend to reduce motion and focus on forms, all has motion=time, and form=space, and this is truly the meaning of 'spacetime', the messing of both into 5 dimotions, the fundamental element of all realities. If we see slow motion in the night a light it seems a long distance. Distance and motion cannot be distinguished so they must be taken as two side of the same being, a Space=time DIMOTION (ab. Dimensional Motion):*

$S = T$ ; Dimension-Distance = Time-motion = ST Dimotion: **Dimensions + motions = Dimotions**

*When we perceive the system in space, then we perceive an organism with 3 adjacent topologic elements, and its forma science is 'vital topology'. And when we perceive them through its scales the organic system becomes a supørganism. When we perceive the system in time we perceive a cycle that returns to its origin as a 0 sum,*



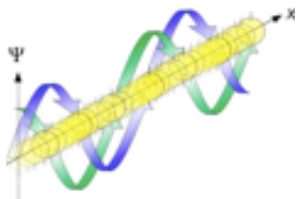
which observed through all its scales will be a life-death cycle, common to all systems where life is the arrow of information and future, death the arrow of death entropy and past, and both together form a worldcycle.

**Stœps=Stops+steps: Motion is reproduction of form in a lower scale. Bohm's realism: quantum potentials.**

Si=Te means any kind of Motion happens as a series of Stœps, as systems move a step, then gauge information in a stop position as the  $\Delta \pm j$  plane provides it with pixels to orientate them, or a background motion deviates its lineal steps into cyclical motions. So the proper way to write the function in dynamic terms is  $S \leftrightarrow T$ .

It is the essential beat of the cosmos in each of its fractal parts. If we consider space=form one of the poles of the Universe, and time=motion its 2<sup>nd</sup> pole, we shall be able to reduce all phenomena of reality, from the function of the mind in one extreme of pure still form (creation of mental spaces) or SS; to the locomotion of species (Ts) and alternate gauging of information (St) and its reproduction in a middle term combination of both poles (SS), to the pure entropy of internal motion that kills the system and external motion that 'scatters it' around (TT) as the 5 dynamic views of the 5 Dimensional motions of the Space-time Universe.

Let us then close this introduction to Absolute Relativity, the 'future basis' of 5D physics, considering locomotion at the quantum scale, as a reproductive process of gauging information as a particle and reproduce it as a wave. How a system moves; in a crowded universe, where we 'are' vital space-time?



The answer resolves Zeno's and quantum complementarity paradoxes: if we do not move but reproduce our information, translated into a lower faster wave scale of the fifth dimension; as we reproduce our sound in faster electrons to telephone or nerve impulses into chemical dopamine to jump discontinuous neurons. So motion becomes scalar reproduction of form, and since all is a form of motion, all is reproduction, which is the definition of a mathematical fractal, a feed-back reproductive function; 5D metrics, which

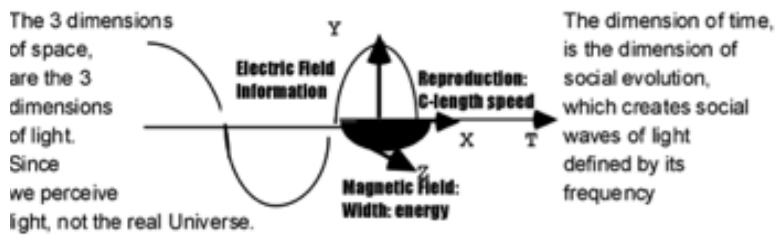
become then the 'function of existence' whose goal is to reproduce the form of all systems – the simpler ones with maximal motion-translation in space, the complex ones with min. motion as a reproduction that emerges between scales. And this gives birth to the worldcycle. Consider the case of quantum physics:

We see a particle reproduced in adjacent regions that fade away, and the result is the perception of a wave of motion. In Bohm's realist model this reproduction happens in a lower plane of quantum potentials, where also entanglement happens, which is the  $\Delta$ -4 scale which is  $v > c$  in 5D metrics (Min. S x Max. T = C), hence real.

Motion then is reproduction of form over such potential: the wave erases form into motion, the particle is a still state that gauges information entangled to other particle, fermion and boson, still to each other – despite the perception of relative motion in our scale – hence the information electrons share has always a c-constant speed. Thus the Lorentz transformation are objectively real for mankind who eliminates the stop state of particles as we do in a movie eliminating the stop frame but if we were observing reality from the perspective of an atom, we would 'stop', entangle in the quantum potential, neutrino scale & so eliminate the spooky effects of 'time dilation' & 'length' contraction, from our perspective (but not of mass increase as it is a scalar effect). This is the 'rational' 5D explanation of both the c-constant of light and entanglement; as electronic beings perceive information in 'stop position to each other' and move in 'wave state'. Motions are perceived by particles that stop motion into form, into information, as distances. So 4D relativity needs to be expanded to the scalar Universe beyond the c-speed light limit of the galaxy.

Newton, Galileo and Einstein's simplified models of space-time correspond to the limit of this 5D complex view, when we simplify all the worldcycles of time, we call life & death to a single mechanical clock, elongated to infinity & perceived in a single scale of spatial information. *Mathematics that considers motion a 'symmetric reproduction of in-form-ation (groups) once more turns out to be a better experimental science than physics.*

A question which still is opened to argument between the great masters of 5D physics, me, I and myself (: is if actually *lineal* motion does happen at all, in those waves, or the imprinting of form is merely transmitted as in



many type of waves by a faster lower plane, whose cyclical vortices of angular momentum perceive a lineal signal that activates the 'consecutive' 'magnetic and

electric constants' of the light wave to form a synchronous wave that seems to be lineal motion to an external observer, In the same way that the waves of water do not move but make circular paths or the synchronization of insects with chemical light seems to create a wave.

Time then can be seen as a mirage of a process of reproduction of form, if we take the side of information, of space as the ultimate substance of reality – and the question is and will always remain open to discussion because both models, one which makes the 'egg come before the chicken moves' – that is, one in which we postulate an ultimate scale of reality of pure cyclical and lineal forms, where the 'lines' of this 5D movie which is existence, are eternally drawn, is as consistent as one in which Motion=time=change=energy, the conserved 'substance' of reality. As, the true knowledge i escapes a 'monologic' one-dimensional view of reality as either time or space, but as an entangled simultaneous reality of co-existing planes of spatial information and temporal energy constantly messing with each other, but the humind is simpler, monologic, loving ceteris paribus siding, which we'll become clear as we define the equations of mental spatial information. In praxis the model suggests that in fact what is conserved is NOT lineal but cyclical time, that is, motion with form, perceived as a solid state; so reproduction is merely the conserved energy cycles of time-motion, happening in all scales, entangled, synchronized to form larger wholes, of ' $\infty$ ' (relative  $\infty$ ) time clocks.

In that drawing, there will be cyclical motion in vortices of in-form-ation, but also waves of lineal messages, on a lower plane – in the case of light our pixels of information, electronic entanglement through lineal flows of 'neutrinos'?, in an  $\Delta-1$  plane (quantum potential on  $B^2$  realist models – ab. Brogile-Bohm's theory). Regarding what is more important, space or time, obviously it is time, *because space will be then cyclical time, as we never saw a particle which was not a vortex of 'accelerated' VoRo=K temporal energy. So it is time motion what acquires form between the two limits of 'potential energy' as a position particle, and lineal flow of disordered never ending energetic entropy.* And so spaces will always be the still mental synchronous ordered established on that continuous never ending flow of motions, which a mental space orders to create repetitive patterns that we see as still synchronous beings. In the human case, constructed with the vital dimotions of light timespace: *The human mental light-Euclidean space one of many multiple spaces made with different force pixels.* Euclidean geometry is the specific mind-mirror of light space-time and its 3 perpendicular Dimensions.

The Universe has  $\infty$  mind-mappings made with different pixels that mirror for each singularity its territory of order (body/wave) and world beyond. The human 'visual mind' made of light is NOT the only mind-mapping. In the graph, on the left the 'physicist' view of a single continuum light spacetime for the whole Universe. In the right side the multiple p.o.v.s

Descartes did understand this multiplicity; so he published his mapping of the humind in a book called the 'World' to differentiate it from the 'Universe' with infinite monads, each one holding an entire world in itself (Leibniz) the very essence of the definition of a fractal timeSpace organism. Yet Humans lost this earlier understanding – as we noted on the introduction - when Galileo didn't argue the fact that the Earth moves but our mind creates a still space, a mirage of the senses. And physicists followed suit, creating its philosophy of reality called 'naïve realism'. Space is a mirage of the mind, (Buddhist Maya; Kant who noted Euclidean geometry was the geometry of the human mind,; Schopenhauer, who saw it as a representation.)

In mathematics the mind function is  $0 \times \infty = C; \infty^0 = c$ ; that is, the  $\infty$  time cycles of reality become in the  $\Delta^0$  self-centered scale of a mind, a constant world that mirrors all what exists in the Universe both in time-motion ( $\infty$ ) and spatial form ( $0$ ).

Because of such synoptic capacity to 'mirror' the laws of space-time in minimal size through the concept of number, which excels the previous synoptic language of verbal phonemes, mathematics soon became the most efficient language we know, but it does NOT create reality. It is just the best mirror of reality.

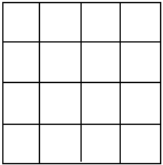
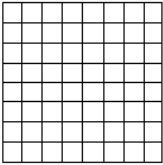
Languages/mirrors occupy an infinitesimal part of the whole, yet paradoxically hold the maximal information of the Universe according to 5D metrics: *Space size x Time speed of information = Constant.*

Thus the mind of the most efficient survival species of reality, particles, 'atoms' and 'galaxies' (black hole atoms of the top quark decuplet) is mathematical and imprint a local order which multiplied by  $\infty$  of such species makes mathematics the dominant mind-species but not the only one and still a mirror of the true reality which is 'scalar space' and 'cyclical time', dimensional form and motion – the 5Dimotions of reality.

A language is first a reflection of the laws of 5Dust of space-time its Trinity elements and Metric functions, without which they cannot order≈recreate locally the Universe. So 5D mathematics advances the discipline by focusing better the mirror to include the bio-topo-logic properties of scalar space and cyclic logic time; and by putting in relationship maths and 'existential algebra' (ab.-Æ), the a priori Disomorphic=equal laws of 5D, making it an experimental science; connecting its laws with the laws of fractal spacetime.

**Measure and density of Dimotions. The concepts of filling space' 'memorial time persistence' & ST-holes.**

An essential problem to both mathematical mirrors and reality is the measure of Dimensional motions as we have an essential equality  $S_i=T_e$  in each plane between form and motion, and a scalar reality. So the value of a motion can be that of a dimension, as *motion is the filling reproduction of a form along a path of adjacent forms (see paragraph on golden ratios).* But in strict sense, 'persistent full space' is the maximal dimensionality possible of a system, when the reproduction in a single plane both durability on those reproduced parts, and the system can fill not only the plane of space but also all its smaller scales. This allow us to define a space without 'scalar voids' and 'dying' steps, as the most 'continuous' possible space, which happens to be lineal and orthogonal, for an absolute filling, i.e. the Cartesian spatial information. So we define a dimension in scalar terms, whereas a classic single plane dimension is the limit for a 'filled persistent space':

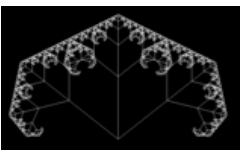
dimension =

$$= \frac{\log(\text{number of self-similar pieces})}{\log(\text{magnification factor})}$$

$$= \frac{\log N^2}{\log N}$$

$$= \frac{2 \log N}{\log N} = 2$$

A square may be broken into  $N^2$  self-similar pieces, each with magnification factor  $N$ . So the dimension of a self-similar object is the exponent of the number of self-similar pieces with magnification factor  $N$  into which the figure may be broken.



Whereas the 'persistence' of memory, of information, creates the solidity of space dimensions (if a point erases without persistence, we talk of a 1D point, where motion doesn't really add to the 1D inner Dimension of the point. But the value of the motion dimension, if persistence is equal to the life of the point, reaches Dimension 2. And  $S_i=T_e$  is absolute.  $S_i=T_e$  however holds if our measure of the system is reduced in time to the persistence of its reproduction. Further on, dimensions are

relative to the scale in which we measure as the smaller scales will have more 'hollow dark spaces' that differentiate the parts. This means if we measure the dimensions of the system across scales in a 5D view of transversal 'tree branching dimension' of wholes and parts (5D), we will find hollow spaces. So 2 scales do not add dimensions to infinity, but have an intermediate value.

For example the Sierpinski triangle generated by the commonest fractal ternary tree has dimension 1.58. While the most famous bifurcation, the Feigenbaum attractor has dimension + 0,5; and inversely a 4 bifurcation (H-fractal) gives us a full filling, 2D. It is another 5D metric paradox: the information of lower scales is larger but its spatial extension smaller. As a subjective observer reduces its dimension of perception to 0 in its  $\Delta \pm 4$  scales. But the objective Universe is a whole completely filled, packed, as a block of spacetime, where time motions 'enlighten' just a part of the entire 'potential block' of scales. Thus we postulate an  $\infty$  being of  $\infty$  scales and  $\infty$  time, the whole which fills its potential block with all potential forms. And yet since  $\neg \text{Æ}$  can prove that the whole filling of the void is a finite number of potential existences, variations of being are limited and so all forms are immortal repetitions.

## THE 4<sup>TH</sup> AXIOM=POSTULATE OF RELATIVE CONGRUENCE.

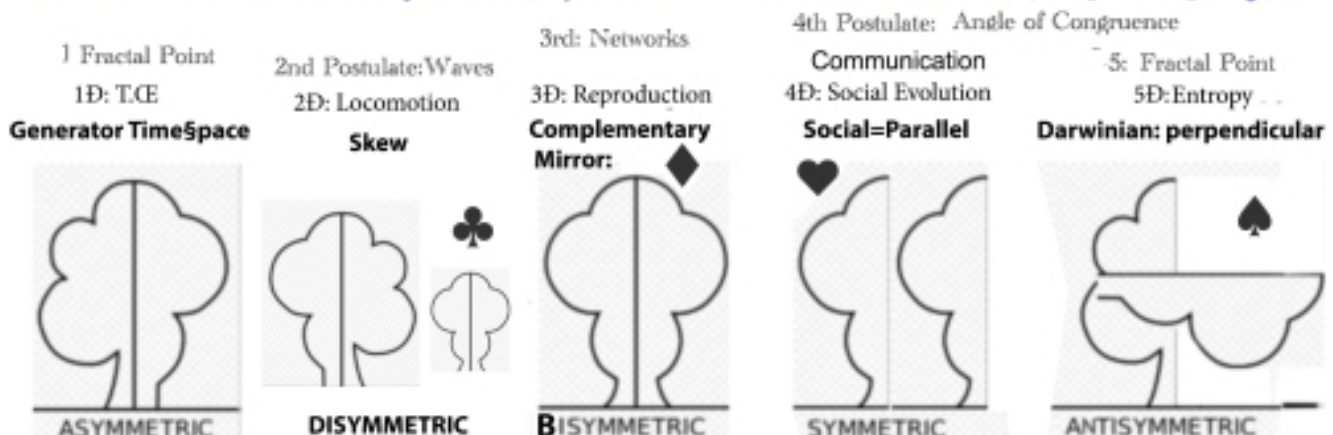
*4<sup>th</sup> Postulate:* Equality is no longer only external, shown in the spatial perimeter of any geometrical form (Euclidean congruence) but also internal and further on it is never absolute but relative, since we cannot perceive the entire inner form of a point – hence the strategies of behavior such as camouflage. Forms are self-similar to each other, which defines different relationships between organic points, according to their degree of self-similarity. The 4<sup>th</sup> postulate is thus the key to explain the behavior of particles as the degree of self-similarity increases the degree of communication between beings. Some of the most common behaviors and ‘events derived from this postulate are:

- 1) Reproductive functions in case of maximal self-similarity or complementarity in energy and form;  $e_i \rightarrow Se_i$  or  $Max E \times min. I$  (male) =  $Min. e \times Max I$  (female).
- 2) Social evolution, when points share a common language of information,  $i=i \rightarrow 2i$ .
- 3) Darwinian devolution when forms are so different they can't understand each other's information so instead they feed into each other:  $i^1 i$ . In such cases if those 2 entities meet they will start a process of ‘struggle for existence’, trying to absorb each other's energy (when  $E=E$ ) or simply will not communicate (when  $E^1 E$ , since then there is neither a common information to evolve socially nor a common energy to feed on). Yet because any point absorbs only a relative quantity of information from reality, similarity is relative, faked for purposes of hunting with biologic games such as camouflage or sociological memes that invent racial differences, allowing the exploitation of a group by another.

The 4<sup>th</sup> postulate defines systems as identical when they are equal in its 3 ternary parts, the outer angular momentum or ‘membrane’, its central Active magnitude or singularity, focus of the forces and the vital energy, *enclosed within them, and all others as similar with different ‘angle of congruence’.* We distinguish 2 different interactions according to the degree of equality of its ternary parts, as systems can be symbiotic, if *their individual, cellular or atomic ‘fractal points=parts’ are similar enough, interacting through its 3 physiological ‘lines=networks’* evolving in parallel creating an organic plane, as those described in the next graph for each scale=science, or they can be entropic, destructive, predatory, when they are dissimilar and don't speak a common language of information to coordinate its actions, whereas the stronger system will perpendicularly break and feed on the weaker one.

The geometric complexity of the 4<sup>th</sup> Postulate is caused by the topological forms created by any event that entangles Multiple Spaces-Times. Since it describes the paths and forms of dual systems, which connect points: Self-similarity implies parallel motions in herds; since equal entities will maintain a parallel distance to allow informative communication *without interfering with the reproductive body of each point.* Darwinian behavior implies perpendicular confrontations, *to penetrate and absorb the energy of the other point.* Finally, *absolute, inner and outer self-similarity* brings boson states, which happen more often to simpler species like quarks and particles that can form a boson condensate as they do in black holes, *where the proximity of the points is maximized. And indeed, the same phenomenon between cells with the same inner information /DNA originates the ‘collapse’ of waves into tighter organisms.*

### PENTALOGIC: 5 $\rightarrow$ AE Geometry Postulates, 5Dimotions=Actions of Existence, 5 Symmetry Angles



The 4<sup>th</sup> Non-E postulate is implicit in the work of Riemann who defined spaces with the properties of self-similarity (homogeneity), and Lobachevski's who determined its closeness with the concept of adjacency.

*4<sup>th</sup> postulate of relative congruence & angle of parallelism as a mirror of its 5 pentalogic dimotions and variations of angle define Darwinian or social, reproductive outcomes to communicative events between fractal points.*

Thus in praxis we assess similarity by an 'angle of parallelism' that increases social evolution into herds and supœrganisms, or perpendicularity that 'scatters' systems into entropic destruction – elements those of an entire fascinating new field of 5D topo-biologic studies that analyze in geometric terms, the vital topology and relationships between form and function in all systems of Nature from particles to organisms.

This simple geometrical truth however is essential to all systems of nature, whose angles of connection determine the functions and symbiosis between parts.

The Universe always starts with an asymmetric being, which can go both ways: towards a social evolutionary symmetry that lasts in time and implies a mirror parallelism, or an antisymmetric destructive, perpendicular event in which one part punctures and absorbs the energy of the other. It is the topo-biological ternary principle of non-Euclidean, Non-Aristotelian I-logic geometry that puts together both the biological and mathematical properties of reality. The concepts of symmetry=parallelism, antisymmetry=perpendicularity and asymmetry are mirrored by the 4th Non-E Postulate of similarity. But we can extend the concept of asymmetries also to asymmetries of time, between the young age of locomotion and the old age of information, of actions=Dimotions between the step and stop similar actions, and the entropy and social evolution actions, which bring us the final asymmetry of scales between the upper arrow of whole with more spatial size and the lower arrow of parts with more information. When those dualities: step-motion/stop-perception and scale up (5D: social evolution), scale down (4D: entropic dissolution) are put together we obtain the most complex balancing dimotion, reproduction, and when they are all added up in the existence of a being, we get its world cycle.

In the graph we can assess the different 5 mirrors in which mathematical Space and logic Time reflects the game of 5 Dimotions=actions of existence, which then expressed by territorial monads GENERATES its logic REALITY. In Geometry fractal points=monads will other through waves of communication of energy and information that grow into reproductive networks a territorial plane, creating a super organism, which will related to the external world according to its relative similarity=congruence, assessed by its angle of parallelism or perpendicularity.

In logic terms, a super organism, by breaking its formless asymmetry into different spatial configurations according to congruence (social parallel systems, complementary gender-mirror systems, Darwinian perpendicular systems, or systems that are dissymmetric and do not share any reality) builds a casual pyramid of growth from a fractal point through waves of communication into social networks that become ready to act - move, feed, perceive and evolve socially.

Since we must add to the mathematical and logic languages-properties of reality the 5 actions, or organic properties of the scalar Universe as essential to the game as they are its logic and mathematical more abstract laws - a fact the egocy of æntropic men of course reject, as it must remain in its monad-subjective monologic the only claimant to life properties.

Thus the pentalogic of Scalar space-time is established by its Non-Euclidean fractal points, its logic congruence with reality in which it will order a territory to perform its 5 vital actions=Dimotions of existence, and the mathematical, logic and organic laws of those 3 languages will be therefore the bottom line of the 'Creative process' of the Universe - nothing chaotic except the entropic Dimotion, which conforms the monologic of huminds.

### *Congruence and topology in existential algebra.*

As only Schopenhauer seemed to realize in his intuitive critique of Euclidean mathematics, little attention has been given to the most important postulate of 'relative' equality, which structures the 'vital will' of parts that become wholes symbiotic, in energy and information, reproducing a new form upon contact or only in information by parallel motion or enter in Darwinian relationships when contact is negative, or are indifferent to each other. Or split from a whole into parts. The 5 options of congruence manifest in all the 'events' of reality, notably in forces. Which determines illogically the need for repulsive cosmological gravitation (dark entropy=energy) to balance the internal impositive gravitation within the galatom (akin to the parallelism between repulsive electromagnetism between atoms and attractive charge and strong forces within it).

Mathematically we realize the  $dx/dy=x/y$  has an inverse,  $dx/dy=-y/x$  possibility of circular tangents or collapsing rays that might go into the center or escape from it, giving us 3 obvious congruences – parallel communication, Darwinian event (with a form escaping or being swallowed), social merge (if the encounter is positive) or no solution at all to the differential equation – erratic, independent behavior.

Congruence based in similarity of energy, information or dissimilarity thus defines the ethics of reality and is essential to the laws of existential algebra from where so many laws of sciences are deduced, such as:

$$X(te) < Y(te) \wedge X(Si) \neq Y(Si) \rightarrow x(te) < y(te) \dots$$

Which means if two systems meet each other, and one X, is 'smaller' in its existential momentum than Y and X and Y do not have the same Spatial informative language, Y will predate on X and hence x, will suffer an entropic dissolution.

It is then possible to tabulate all events that might happen in the Universe according to congruence and the different 'strength' in the existential momentum of both systems.

And then establish a deterministic outcome for all events between species.

Existential algebra thus couples with illogic geometry to establish the deterministic nature of the event of the Universe.

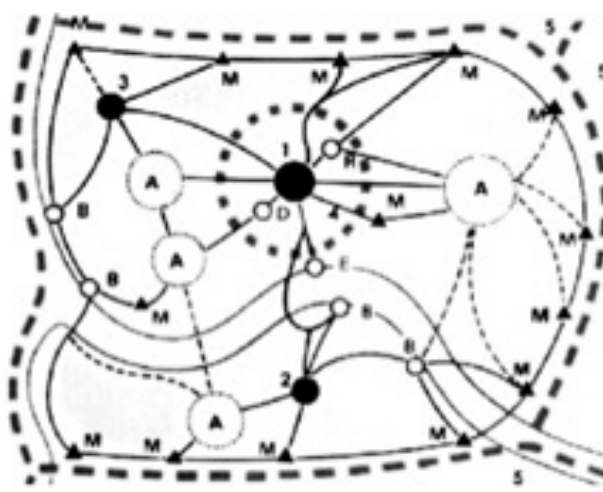
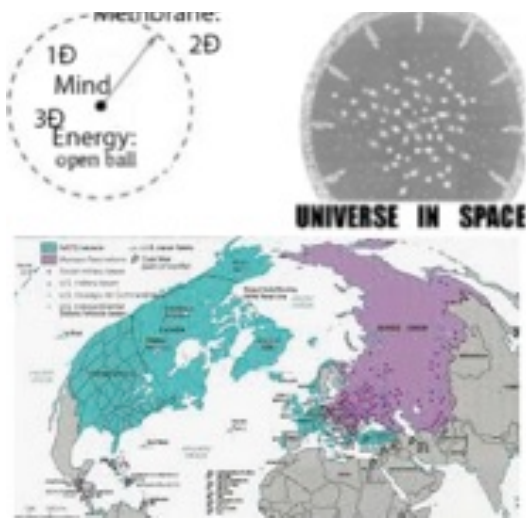
Since those rules written in existential algebra terms are the deterministic translation and expansion to all the sciences of reality of the encounters between the elements of any species and therefore become the most important fusion of non-e geometry, non-algebra and reality as we can always assess in a rather deterministic manner how the encounter of two elements in any scale of reality becomes a given outcome between prey and predator, couple of gender, social group, enemy nations, atomic ions, etc.

### **External dimensions/networks of organisms: territories.**

*The key element of Non-E geometry are the 3 topologic regions of all systems, as that is the underlying structure that evolutionary topology develops, with a singularity, @, dominating a vital territory enclosed by a membrane.*

It is the mixture of function in time through actions of survival that dominates the spatial ternary structure of those T.oes, which guides the understanding of vital geometry.

I.e. "Though most arachnids are solitary animals, some spiders live in enormous communal webs housing males, females, and spiderlings. Most of the individuals live in the central part of the web, with the outer part providing snare space for prey shared by all the inhabitants". *Britannica*



Indeed, regardless of the vital topology of the point, all 'build ups' of new geometric scales start with the simplest form, a 'bidimensional territory' with a membrane, a

central singularity and the vital energy between them. So geometry not only evolves in the humind in complexity, it does so in the evolution of the vital topologies of new forms in each single plane:

In the graph, all systems regarding of its 'perfect geometry', have the same ternary structure, to which vital geometry adds motion, in a Klein-like Non-E structure, where borders of entropy=death can't be crossed; so they are relative infinities – military borders, balls of fire, membranes. On the left we study in more detail a mammal territory. Any animal territory is an i-logic space-time with 3 zones:

An informative central territory (1) or den, where animals reproduce and 2 secondary homes where the herd performs secondary organic cycles (2,3).

An energetic membrane (M, 5) – an invisible limit that provokes a confrontation if a stranger crosses it and where most energetic preys 'flee' away from the den of the predator.

An intermediate zone with cyclical paths of absorption of Entropy and information; where we find a hunting territory, places to drink (E), to bath (B), socialize (A), defecate (D), etc.

In organic terms, a dimension is a network. So a living organism can be considered a sum of cellular quanta united by 3 basic space/time discreet dimensional networks, which are its physiological systems: the digestive/energetic network, informative/ nervous network and reproductive/blood networks around which cells teem, creating a stable, organic st-point. In other words the Entropy and informative networks of a living being are its internal, diffeomorphic dimensions (of relative length and height), to which the organic system adds a 3rd, reproductive dimension that combines both elements and represents the width or 'volume of cellular quanta' of the system.

Finally its movement in the external world becomes its 4th temporal dimension. Yet that 4th dimension of external activity can also be considered a network territory in itself, sum of the  $3 \pm i$  cycles of existence of the being, creating a bigger vital space that will become the basic unit of an ecosystem or social organism made of individuals of the same species. In the figure we draw the vital territory of a minimal social pair of mammals, differentiated in 3 clear sub-sectors:

Max.Information: Informative den or central territory (1,2,3):

It is the territory of reproduction used to copulate and store basic food and Entropy to raise the young. It is a forbidden zone where hunting is not allowed (4). In social species of great mobility, aerial or marine, where borders are much more extensive, this territory is very ample and tends to be located in warm latitudes.

Entropy=Information: Dual Territory of Entropy hunting and informative socialization (5).

It is the feeding, social and hunting territory, on which the central informative being feeds itself. It is outside the zone of reproduction. It is the winter territory of many migratory birds.

Given the relativism of all movement, in biological territories the informative singularity moves to hunt its Entropy quanta, as opposed to galaxies where stars and space-time dust moves towards the central worm hole.

Within those limits there are also neutral territories of communication, courtship reproduction and free Entropy, like water troughs. So the intermediate territory works both, as an informative and energetic territory where different victims and predators trace parallel cycles and come together around meeting points (E, B, R).

#### Max. Entropy: Borders that limit the territory.

Membranes are dangerous topological zones of dual osmosis. So the informative center watches to control any invasion of its hunting/social territory. Membranes fluctuate according to neighbors' power. For example, the vital space of a fish increases during mating, since the couple is more powerful than a single individual. Marks (M points) fix those limits and reduce combats. They are often invisible, as most territories are defended against competitors of the same species, who understand the informative code of those marks; but rarely against members of other species. So we find all kind of linguistic marks:

*Smells* (common in mammals, like foxes, rhinos, antelopes), excrements (in canines and felids) or other glandular secretions.

*Optical marks* often connected to scents: The brown bear creates marks in trees, rubbing them with his head, warning adversaries of his great Max.SxT size and force. In human empires (nations can also be treated as biological territories) visual marks correspond to armies displayed in the borders. In human homes those marks used to be shields with weapons; now they are cars and other proofs of money, the new language of social power.

*High pitch, acoustic marks*, proper of birds, which are triggered when a rival enters the territory.

**Recap.** Vital animal territories and human nations can be explained with the 3 topological regions of st-points.

The structure of  $\delta < TS < \delta t$ , territorial spaces with a central point of view, developing its particular worldview, trying to reach infinity with his distorted geometry, affine to a projective geometry where far away means small, defines each world of a Universe, which is objective when 'clashing' each form with all others – so only eusocial love, and emergence through the scales of the 5<sup>th</sup> dimension make survival possible. Geometry is then the study of the spatial form that the functions, which dominate the vital, sentient Universe, adopt in their existential actions.

And as such is the best method to visualize the 'meaning' of algebraic and analytic functions both in abstract and mathematical physics. Each of the different laws of bidimensional plane geometry then can be studied as a reflection of the efficiency of vital Dimotions in a simplified geometric form, where curved paths become perfect lines, distances are measured without error and angles have no geodesic distortion. But still *vital geometry will add to those structures its vital interpretation, besides the abstract knowledge introduced by the Greeks, on the lines of the previous graph (which become lineal forms in other systems such as 'polygonal molecules' or human artificial constructions).*

In Geometry thus we can also use the 'pentalogic points of view' on each theorem and also specific of geometry the vital meaning of the *5 angles of congruence (4 non-E Postulate), from Darwinian perpendicularity to social parallelism.*

### **3<sup>RD</sup> POSTULATE. EMERGENCE OF ORGANIC NETWORKS INTO PLANES OF EXISTENCE**

The building up of a true 5D science of reality thus start by defining all the dimotions of a being in its 3 scales. Then we study its 'locked' sequences of dimotions and its 'balanced' stoeps=beats, in all those scales. Then we do find the synchronicities between scales that become entangled repetitive discontinuous symbiotic patterns. And then we find the 'larger' physiological networks, or 'organs' that entangle them; as the smaller parts will gather around those networks, to receive energy (blood-like reproductive networks that deliver larger particles), information (which requires as we have seen a faster nervous, informative network of smaller particles and external territories of entropic feeding (symbiotic to the digestive networks)).

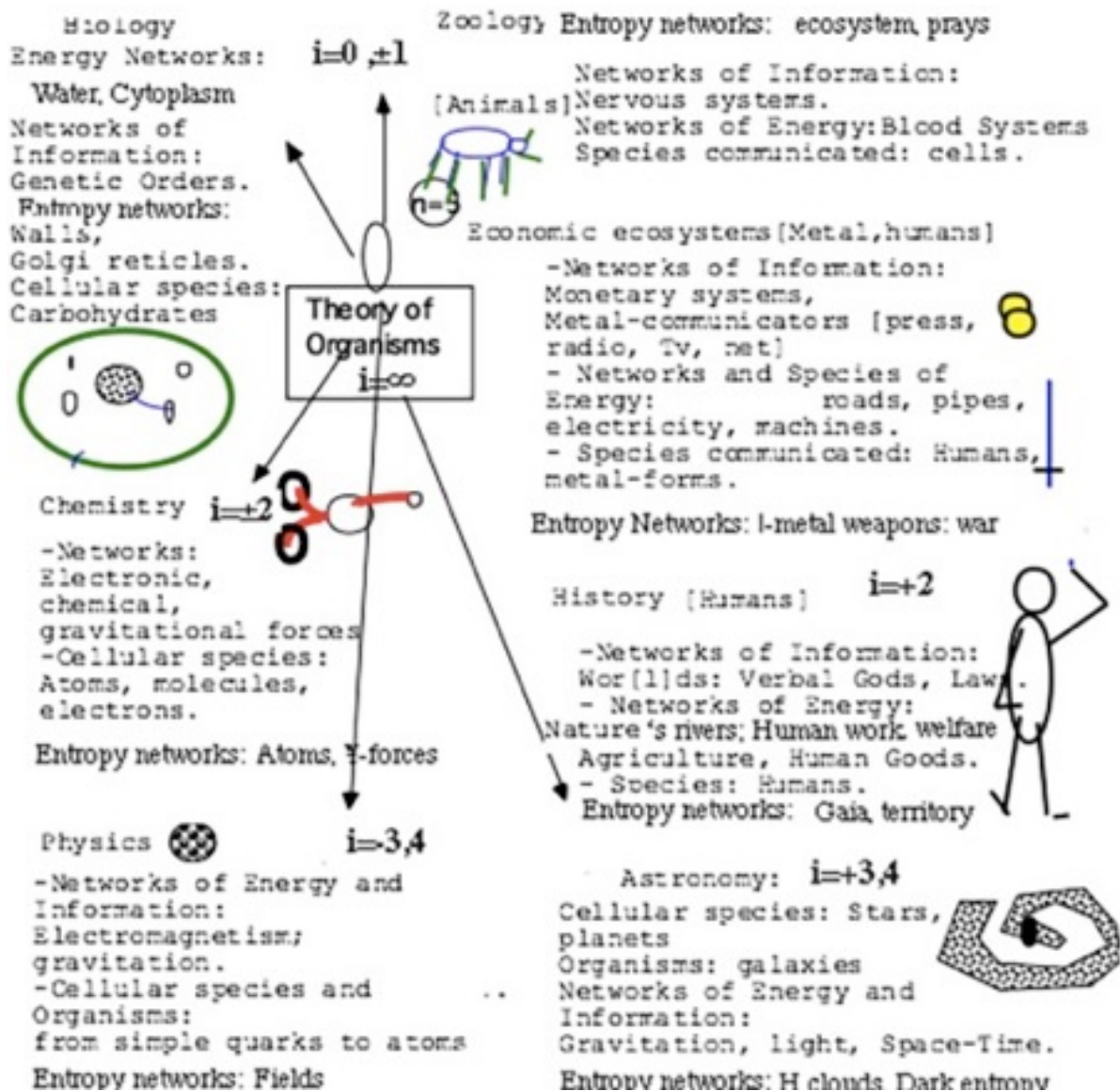


Complexity arises and produces the emergence of larger wholes, the 3 physiological networks and its attached organs, which are the topological vital spaces that form the superorganism. All species studied by science a common phenomenon occurs: the existence of parallel groups of beings organized into a single social form. Molecules are made up of atoms and electronic networks; economies are made up of human workers and consumers that reproduce and test machines, guided by financial networks of information (salaries, prices, costs); galaxies are composed of stars, which orbit rhythmically around a central knot, or black hole of gravitational information. Cells controlled by the nervous, informative system organize human bodies.

A tree is a group of leaves, branches and roots connected by a network that provides energy (salvia) and information (chemical particles) to its cells. Cultures are made of humans related by verbal, informative Disomorphisms and economic networks that provide their energy and information.

How then it happens that parts become wholes is the key to depart from a mere abstract, quantitative analysis of reality and add the organic nature of all what exists, the dynamic interplay of parts that 'network' and connect to each other, forming simultaneous spacetime organisms, which synchronizes its clocks, emerge as a whole and develop all the intelligence and complexity of the systems we observe around us. A final element though is needed to make sense of those superorganisms, *the still mind of information, mapping out the whole and controlling it to perform its Mandate of existence, Max. SxT (s=t), to survive, grow and multiply.*

The ternary network structure of nested organisms makes them  $\rightarrow \infty$  topologic planes composed of similar fractal points (atoms, cells, individuals) joined by 3 physiologic lines=networks, whose 3 functions, locomotion, information and its combined energy define the 3 conserved Dimotions of any system of the Universe.



The graph shows those physiological networks of each supœrganism from the galaxy to the atom, where self-similarity takes place. I remind you of the  $S_i=T_e$  equality, which means we slow beings see networks of faster particles as 'force waves' and networks of slower life forms as fractal branching, but essentially as Nottale has proved, we can 'translate' quantum physics into a network, topological view, as light is in fact a branching filling wave that 'speeds up frequency' as it penetrates lower planes, filling it till it touches particles.

*All systems of reality are connected by networks that share energy and information between parts and wholes that expresses the structural unity of all scales. Networks 'fill' space ad maximal to connect fully the whole with the parts, achieved in the  $S_i=T_e$  point of parallelism and self-similarity. But they entre in a region of faster motion. So while Space 'tends to remain constant' in each scale thanks to filling networks, time accelerates. So we need to become a bit more complex about the previous metric. It refers essentially NOT to the whole 5D plane but to a given 'superorganism' of each plane. When we go down in scales, in fact the Universe 'enlarges' for a traveler that becomes smaller and accelerates its temporal energy.*

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In the graph, systems sciences consider the Universe an organic fractal, which each science studies at a level of size, all of them evolving socially through networks of energy and information. So we can study species as organisms living a world cycle and evolving finally in social networks becoming super organisms, the most efficient survival strategy of the Universe, where a head-particle-informative class will invent a language of common organization, quantum numbers, hormones, genes or memes, money or laws that all the body-wave parts/cells/citizens will obey. The goal of systems sciences is then to properly apply the physiological laws of networks to design or study perfects organisms of nature, including mankind and the economic ecosystem.

In the graph, the physiological networks of some super organisms of the Universe, which can be formalised all into a logic equation, we call **the fractal generator of the organic Universe**:

$T_s$  (Spatial, past, entropic limbs/fields/territory) <  $ST$  (present re=productive body waves-working class) >  $St$ : temporal-informative particles/heads/informative class.

So everything really is encoded in those networks and its topology and it can be explained with multiple languages, the language of topology (mathematics), the language of logic (sequences of actions the networks cause) the language of social classes, as the 3 networks with its attached cells have a hierarchical order, with the informative nervous network in control of the faster languages on top (legal politicians and financial bankers in human societies, nervous cells and blood leukocytes in biologic organisms, gravitational black holes in galaxies, etc.). But don't worry we just race through the basics so we can concentrate in the social organisms of history.

There are 3 physiological networks in each supœrganism from the galaxy to the atom, the two scales where self-similarity takes place (the galatom smaller and larger planes). But *we can for the time being disregard the 'territorial, background network, the spacetime of the galaxy and its particles, the water of life organisms, the Territorial surface of earth in historic organisms, to concentrate on the body-wave-reproductive economic system, and particle-head, informative legal systems that shape the essence of a superorganism.*

The key to understand its linguistic bits and bites of information and energy are as in most themes of reality the astoundingly simple Metric equations of all the scales of the fifth dimension: size in space x speed of time cycles = constant. And the duality of Spatial information and temporal motion that combine in 5 Dimensional motions:  $TT$ -pure motion (entropy) >  $T_s$ -locomotion, energy  $S=T$  (reproductive energy and information combined) >  $St$ -information (form with a bit of motion) &  $SS$  (form, position, language).

*All systems of reality and its limbs/fields, body-waves and particle-heads existing in a larger world with faster energy that appears as them as the limit of TT-entropy and faster information that appears to them as the limit of SS-language play then a simple game of trying to absorb as much Ts-motion, reproductive energy and information to perceive, reproduce, survive, move and play the game of existence. And as systems become more complex and dense, they naturally attach to those 3 type of networks, evolving from herds into superorganisms.*

The 5D metric equation,  $SxT=C$  and the  $S=T$  point of balance and equilibrium where the system reproduces are the two fundamental metric equations of all space-time organisms, which means among other things that:

- Slow beings use networks of faster particles which in physical systems are 'waves of force' in life beings are and networks with fractal branching and in human societies, networks of money and simultaneous legal messages. Yet all are essentially performing the same organic functions, we shall describe now as can 'translate' a light filling wave that penetrates lower planes, filling it till it touches particles, as a branching that 'speeds up frequency'; and a legal network that every citizen knows and obeys as a filling system of information, similar to a DNA network that all cells of an organism have in common. *Think always NOT in the differences of form and scale but in the homology of functions for the body/waves and particle/head of each of the 3 superorganisms (working and informative classes in human societies), to see the unity of it all.*

### **The 2 languages of informative and reproductive networks: Bits of information and bites of energy.**

It is important also to Understand NOT in pure abstract mathematical terms, but in logic, linguistic ones, the internal, dynamic nature of those networks, because only then we can properly understand how they work in advanced organisms of maximal information, the biological organism and the historic organism, which belong as 'fractal systems' self-similar to each other, two the same specific type of organisms, we shall qualify as socio-biological organisms. A network, of informative nature, delivers messages of information to simultaneously coordinate the actions of all its parts; with its faster=smaller bits of information according to 5d metrics (min. spatial size x. max. temporal speed). While the networks of reproduction, the blood and financial system delivers larger bites of energy, which the organism needs to feed itself (when it is a healthy non-corrupted superorganism as most of nature, but not human societies, whose astounding level of corruption we shall explain in detail).

Indeed, the key to the full understanding of reality both in terms of energy but also in terms of information, as both are two sides of the same coin, called 'existence' is the fact that in the sentient Universe, each fractal point, atom, cell or citizen (physical, biologic or social systems) needs bits of information, form, smaller in size of space, hence faster according to 5D metrics ( $SxT=C$ ), but also 'bites' of entropic energy which will help the system to move. Networks are NOT some abstract 'fractal tube' but they exist to deliver 'energy and information' (SS: form=language with a little motion=St-information and motion=entropy=TT with a bit of information = energy=Ts).

So a healthy superorganism will deliver to each 'fractal point' (molecules, cells, human citizens), two type of messages through two type of networks. We shall call 'generically' the 3 type of bits and bites of information and energy that each of those 3 physical, biological and social systems receive, 'particles, genes and memes' even if the words as usual in 5D sciences are slightly changed, and widened in its original meaning.

So with its specific variation, those are the two fundamental reproductive-'body-wave' and informative-'particle-head' bites of energy and bits of information of the fundamental systems of nature:

- In physical systems, the two networks are the gravitational faster network of information, which we humans do not perceive, as we are much larger beings with electronic networks. Its bits of information in this faster non-local network should be 'gravitons', components of gravitational waves. In physical papers we advance as the most likely particle state of those waves of information that 'position' the different physical systems of the galaxy, a gravitational tachyon 'neutrino' for multiple reasons, we study on our papers on physics.

On the other hand, because we do perceive it, it is much easier to prove that the energetic network of physical systems are electromagnetic waves, photons and its 'social, static state' as the elements of an electronic nebulae, trapped in the potential energy well of the atom. Thus photons and electrons become the 'energy network of physical system, molecules.

We shall escape then in this introduction further information on the scalar structure of those networks and how, as we 'grow in scale', what is a bite of slow energy for a smaller plane of space-time, *becomes for the larger plane's slower beings, a faster bit of information, in the amazing beauty of the harmonies between scales. So electronic 'food for atoms' becomes electronic information for biological organisms and so on.*

- Those biological organisms do have then two fractal networks, the electronic, informative nervous system in which bits of electronic information moving along the myelin membrane deliver faster messages to every part of the organism to simultaneously synchronize its motions, so the body-cells act as a single form in simultaneous space.

- But when we move into the bites of energy delivered by the blood organism, the network delivers to each cell the basic 'currency' language of energy that all cells need to move, called 'oxygen'. *It is an atom of slower motion than the electrons but due to its electro-negativity and readily availability in the atmosphere, with its capacity to kick with two OH- & H+ legs the water 'medium' on which cells exist, the perfect language of 'money' for the organism to start kicking its 'actions'.*

*So we DO have in the next scale according to the perfect laws of harmony, the two basic biological bits and bites of information and energy, electrons and oxygens, and from then on, as systems become more complex, variations of those bits and bites occur.*

The main category are mixed ST messages, which deliver BOTH a stick and carrot 'complex' to the cells and its big molecules, which are amino acid systems, of great simplicity called Hormones, starting from the simplest of them all, an NO molecule (which do relax muscles, its main message to the locomotion system, increases the pressure of blood, provoking sexual erection, the simplest message to reproductive systems and multiplies the neuronal activity. *As nitrogens are the clock atom of our mind-brains.*

*So finally more complex NO systems with a body support of carbon chains become 'hormones' which might have a 'higher informative message' (with more N, as in nucleotide molecules) or a higher energetic message (as in acids with more oxygen).*

*They form then the basic letters of the 'biological longer sentences that might accumulate information' in ever more complex molecules, as biological organisms are by far the more complex systems we know of.*

Finally a very important concept is the difference between an ecosystem in which multiple superorganisms co-exist, often in predatory relationships, vs. an organism in which only a type of atoms, cells or citizens co-exist, and is far more symbiotic as all parts love each other and share energy and information through its networks, over a common territorial space, as shown in the graph.

Those three physiologic networks/classes/physical parts of ANY system of the Universe define the Universe indeed as a fractal organism of infinite smaller and bigger super organisms, in a game of russian dolls in which each of us is a 'island-Universe' within itself, made of smaller parts, and for that reason each of us is also a part, cell/citizen of a social super organism, nation, religion or civilisation, which we do NOT see as a whole, as our cells do NOT see us as a whole, but DO exist as such.

*What makes then the whole a whole? The answer is: the nervous, informative languages that communicate all the parts of the super organism and 'trace' within its syntax and value, its path of the future. And so we have talked first of it and will constantly coming to the bottom line of reality - the languages that construct the organisms of the world.*

Let us then define with similar templates the 'stair of nested Universal supœrganisms, of the 3 stientific varieties – physical, biologic and social:

**Δ+3:** A galactic organism is a population of stars, related by energetic electromagnetic networks and gravitational information with a nucleus made of a swarm of black holes, and a membrane made of strangelet matter symmetric to:

**Δ-3:** An atomic organism is a population of particles, related by energetic electromagnetic networks and gravitational information with a nucleus made of a swarm of quarks, and a membrane made of electronic matter symmetric to:

**Δ+2:** A star organism is a population of electronic plasma, related by energetic networks of electromagnetism and gravitational information with a nucleus made of a swarm of atoms, and a membrane of photonic radiation symmetric to:

**Δ-2:** A light organism is a body of energetic waves over a quantum potential field of gravitational neutrinos, directed by its particle, informative photon state...

**Δ-1:** A cellular organism is a population of molecules, related by energetic networks (cytoplasm, membranes, Golgi reticules) and coded by genetic information (DNA-RNA.)

**Δ=0:** A human organism is a population of DNA cells, related by networks of genetic, hormonal and nervous information and energy networks (digestive and blood systems).

**Δ+1:** An animal ecosystem is a population of different carbon-life species, related by networks of light information and life energy (plants, prey) coded by instincts.

**Δ+1:** A historic organism or civilization is a population of humans, related by legal and cultural networks of verbal information and agricultural networks of carbon-life energy, coded by human memes.

*Networks that share energy and information between parts and wholes that expresses the structural unity of all scales connect all systems of reality. Networks 'fill' space ad maximal to connect fully the whole with the parts, achieved in the  $Si=Te$  point of parallelism and self-similarity. But they enter in a region of faster motion. So while Space 'tends to remain constant' in each scale thanks to filling networks, time accelerates. So the 5D metric refers NOT to the whole Universe of 5D planes but to a given family of 'supœrganisms' of which mankind in it 3 scales of 'biologic cells', human individuals and societies is undoubtedly a 'phyla'. When we go down in scales, the Universe 'enlarges' for a traveler that becomes smaller and accelerates its temporal energy.*

### **The 2 languages of history: Verbal, legal, ethic 'nervous messages' and 'WHealthy money'.**

So we arrive to the human social networks, which we anticipate are in the present form 'completely corrupted' by the existence of a parallel 'economic ecosystem' of lethal goods, weapons, and corrupted parasitic money. So it is difficult for the reader to understand how simple, easy, and efficient WAS in the past, before the age of Metal, in the Neolithic, or during the ages of social religions of love or could be in the future with a proper design of the social networks of money and law, a PERFECT superorganism of history as efficient as those we just have described. In such superorganism, there are exactly the same networks: Legal verbal just networks of bits of word information that shapes the informative and cultural systems of the wor(l)d. And a healthy form of money, delivered to each citizen cell as a Universal salary so humans have enough energy to survive and buy its natural welfare goods, which must be classified NOT by price but by its biological usefulness to mankind, reason why we give them positive and negative values in the ethonomic frame of reference, according to its use for the 3 organic parts of humanity at individual and social level.

Since Vital, Topologic, physiologic network laws are the most important to consider when studying History in Space, as the reader can observe in the previous graph, since History, the Δ+1 scale of superorganisms of

mankind follow all the exact laws of a lower organic plane – that of a biological organism, albeit, due to its ‘primitive’ degree of evolution is NOT a well designed organism, but one clearly ‘sick’, infected by ‘lethal goods’, with dysfunctional parasitic economic systems (as the language of reproduction of goods, money, is absorbed by a minimal number of people, or used to reproduce those lethal goods). And so the study of History as a superorganism has 2 different parts:

- On one side we can consider a perfect, efficient superorganism of History with the laws of vital topology just by imitating perfect efficient superorganisms of Nature, which *are the majority of them – History is in fact an exception – as we said a sick organism.*

- On the other side, we can study our superorganisms, as they have evolved in time, spotting their degrees of corruption and sickness of its 3 physiological systems, the life Earth, Gaia that sustains them; the economic and financial system that reproduces its goods, and the informative cultural and legal system that synchronizes its citizens cells. It is then when it will become evident what went wrong with ‘human’ history, one of many likely subspecies in the infinite fractal planets of the organic Universe that likely will not make it into the future...

In the next graph we can see a historic super organism based in welfare, wealthy memes that allow humans to survive, belonging to the ‘ideal species’ that would be efficient, provide to the 100% and survive...

History is a super-organism made of human cells, extended over a geographical body of energy called Gaia, the vital-space or body, where historic, social organisms evolve. In that sense, a human and a social organism, a nation or a civilization, have in common the elements of all super-organisms:

1. *Cellular units.* These are cells in a human body, citizens in a human society.

*Networks of energy or vital space; provided by Gaia, a super-organism made of living beings, joined by a common network of visual information and networks of life energy, gathered around her ‘river veins’.* Since Gaia is also the living organism that hosts the social organisms of Mankind.

2. *Networks=Languages of information.* This is the nervous system that organizes cells in a body, or the verbal/visual information that organizes human societies through laws, ethics and art.

3. *Networks that reproduce energy and information.* These are sexual systems in individuals; and economical networks that reproduce goods and cultural networks that define how humans reproduce in societies. This is the blood system in a human body and the economic networks of production & transport in a society that favor ‘WHealth’, that is, goods that satisfy the needs of the ‘3 physiological networks of life-existence that make us human beings, whose ‘proper frame of reference’ (left) is NOT based on financial values, manipulated by financial institutions and companies that set prices, but by ‘biological true values.’

So a human organism is a population of DNA cells, related by networks of nervous information and energy (blood). And a superorganism of history is a population of citizens, related by legal, cultural, informative and economic-energy networks ‘predating’ over a territorial geography, on the outer ‘membrane’ of planet Earth.

If we consider that networks of energy and information belong to two different scales, and take into account the conservation of volume of space-time between scales and the  $S=T$  equality, since smaller scales have faster times speeds and smaller parts, perceived as relative information compared to the bites of energy of a larger scale, we find an equivalence between a ‘network’ of bits of information of a smaller  $\Delta-1$  scale and its equivalent volume of a herd of bites of energy of a larger  $\Delta 0$  plane:  $(\sum \Delta_i = e = \prod \Delta_i - 1)$ . *This equivalence is essential to everything in the Universe as it allows the coupling of languages and energy, making for example the physical economy equivalent to the financial economy, the language equivalent to the action; the mathematical equation a mirror of reality. But as information is smaller and more abundant, this equivalence tends to be inflationary, themes those that appear in all the planes of space-time and the interaction of minds and languages of information (SS, St) with Energy bites and entropic boosts (TT, Ts).*

**IT IS THE 5<sup>TH</sup> POSTULATE. 5D METRICS AND MIND MIRRORS SCIENCES. ITS FUNCTION:  $0 \times \infty = C$**

Let's now deal with *the most important consequence of relativity of motion that only Leibniz quite understood with its concepts of monads – the fact that the no perception of motion implies the existence of minds=monads:*

The biggest discovery Galileo missed was the mental nature of space – the fact we see reality still because minds perceive in stillness, reducing motion to form. Space IS born in a mind's simultaneous perception of events (something Einstein's relativity will help us to calculate) and this will give birth to the proper understanding of motion as reproduction of form, of the duality particle in stop form and wave in motion, of the Lorentzian transformations and its paradoxes and a long etc. of distortions the mind effects on reality.

But it will allow us to define the mind in mathematical and logic terms with a clarity never achieved before. As the mind is the linguistic still space we see – the other extreme of reality, being time motions in its TT-entropic inner and outer motion of scattering disorder and death. So we can philosophically consider reality a tug-of-war between time in its continuous motion and still minds, fractal, non-Euclidean points that hold a world in themselves (Leibniz) trying as monads to fix reality into its subjective self-centered point of view.

**QUANTIC MIND-WORLDS: HEIGHT DIMENSION**

**Besides human eye-worlds the Universe has many i-planes of existence, dimensions & time arrows that quantic mind-species perceive with other languages – forces used to describe these ExT i-worlds:**

<b>Riemann Sphere</b> I=0	<b>Atomic Spin</b> I=3	<b>Dx Orbital</b> I=4	<b>Fullerene Spin</b> I=5	<b>Mantis</b> I=0	<b>Verbal Speaker</b>	<b>Satellite</b> I=7	<b>Galaxy</b> I=8
							
<b>Projective Geometry</b>	<b>Electric Field</b>	<b>Molecular Basin</b>	<b>Glycine</b>	<b>DNA</b>	<b>Brain Axis</b>	<b>Antenna</b>	<b>Temporal Black Hole</b>

**SENSORIAL BRAIN SYSTEMS PLACED ON THE CENTER OR HEIGHT OF ANY ORGANISM USE LANGUAGES TO ABSORB I-n PIXELS THAT SCAN THE ENERGY ACTIONS AND TEMPORAL CYCLES OF ITS WORLD RELEVANT TO ITS SURVIVAL:**

Indeed, those two functions do give origin to all phenomena of reality. So first we shall consider the most important consequence of relativity – the function of the mind which is the system that creates the spatial forms by reducing the information of time motions to still simultaneous mappings, and the function of survival in biology that all systems including physical ones (maximizing its equivalent parameter, momentum) follow regardless of how we describe them, with Hamiltonians and Least time principles in physics, with evolution in biology, with the drives of life in sociology.

**Mind sciences study the sentient properties of every type of superorganisms' mind.**

The Galilean Px. Si=Te explains the existence of mind-spaces based in linguistic forms, whose function is the basis of the psychology of the mind – the ego paradox, and the processes of creation of scales (seeds, minds, genetics, etc.)

*The mind or 0-point is, the relative frame of reference that maps the  $\infty$  cycles of time of the Universe, reducing them to a 'World', to fit them into the infinitesimal volume of the brain.*

The mind though believes to be the center of the Universe in the 'ego paradox' as he sees every thing turning around its infinitesimal point, which hosts inside all the linguistic perception of reality, or 'world' it confuses with the universe. So the mind is a fractal point •, but believers to be it all.

The paradox of the Ego – who make each mind to feel so important – is then rooted in the self-centered structure of the mind, which selects information from its point of view, creating, an infinitesimal linguistic mind-mapping of reality - which then it confuses with the whole universe:

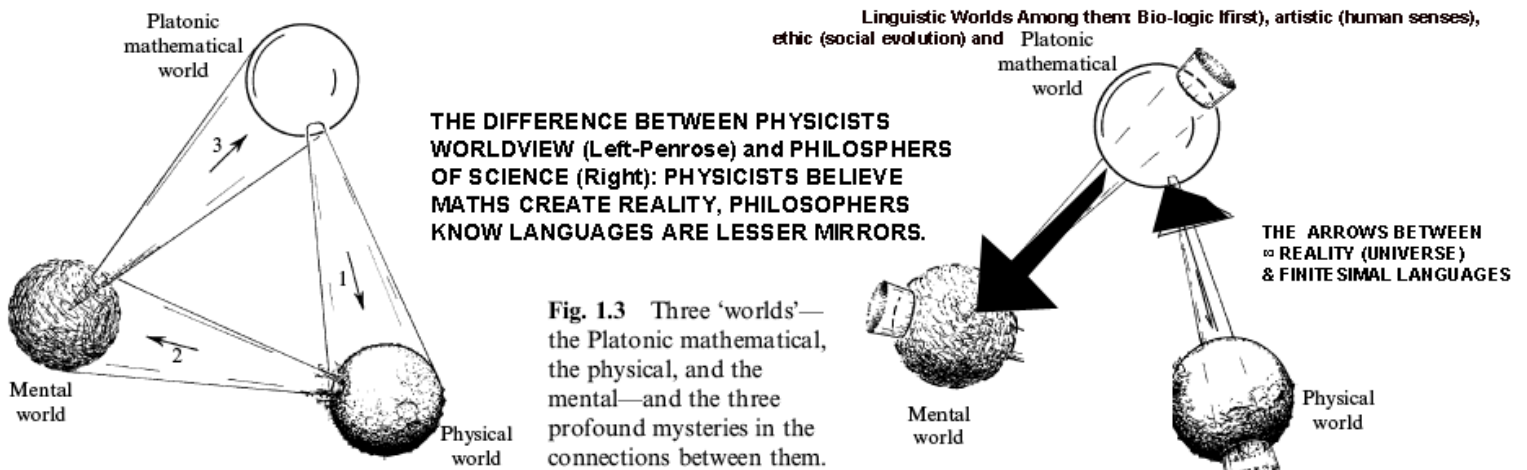
*0-linguistic mindx∞ Universal space-time cycles=Constant World mapping of reality, with @mind at its center.*

The ∞ information of the Universe is reduced into the relative infinitesimal volume of our mind gives us a constant mapping, where we expel all the properties that are not interesting to us and our self-centered view.

The mind is a singularity or infinitesimal 0-point, a relative frame of reference that maps the ∞ cycles of space-Time of the Universe, reducing them to a World to fit selected useful information into the finitesimal volume of the brain. The mind function is the origin of the Ego paradox, the key to psychology, subjective human cultures, religions & 'ænthropic' science: 'Every mind measures reality from its biased p.o.v. confusing the ∞ Universe with its 'finitesimal self-centered world'

The universe has infinite such mind-mirrors depending on the forces used to gauge the external world, which bounces on a limited quantity of its scales of spatial information. Humans perceive the range of scales of the frequency of light between red and blue social density of colors.

∞ other minds with different detail according to the quantitative pixels they absorb (max. S=Min.t) maximal for smaller sixes will determine the intelligence of the system. Mind languages map reality into spatial forms. It is the 'intelligent' still spatial limit of reality, as all what exists are disordered entropic motions=forces and 'minds', particles-heads whose logic & mathematical languages create a territorial body order that forms of reality. 'Vital motions and perceptive minds' make up a 'vital, perceptive, intelligent' Universe. Since *particles*



*have all the 5 Dimotions, gauging information, decoupling=reproducing & evolving social with magnetic fields.*

How can we formalize the concept of a mind as a fractal point, whose infinitesimal volume hold a world in itself? Through one of the many 5D revolutions– the upgrading of the principles of non-Euclidean geometry.

The creation of scales of reality is then a simple game in which a point mind reduces reality to its infinitesimal form and then projects into its local territory of order, which will reflect at scale, the larger whole or world, which the linguistic image reduced and then enlarged back into its territorial form: Fractal points unlike Euclidean ones are points with parts, as we come into its scale grow in size and display the 3 minimal parts of all of them, its area, frequency of angular momentum, and central Active Magnitude, the 'singularity' - focus of



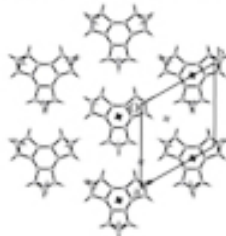
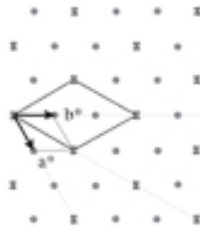
charge, mass, forces or informative minds. Minds are thus also reproductive functions across 'scales' of the fifth dimension, which reduce and project its mirror-image in its body-territory of order:

A mind exists in all systems in which time stops to form spatial information. In galaxies happens in relativity functions in black holes, its mind. In thermodynamic physics in the eye of an Eddie. In quantum physics in the center of an atom, or charge. Without linguistic minds that order by reflecting its smaller mind into its local territory reality would not exist. The only way to create fractals is through mirror images.

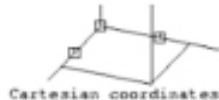


n infinity mirror effect viewed

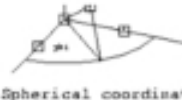
**MAXWELL'S DEMONS:**



*Tf* singularities in solid crystals and DNA in liquid biology reproduce & evolve form; only entropic gas doesn't have Maxwell demons. It is an idol-ogy of physics, science of pure motion, to deny the ST-reproductive and *Tf* informative arrows of Nature



Cartesian coordinates (x, y, z)



Spherical coordinates (r, phi, psi)

Maths exist because self-centered reference frames mirror the Universe from the 3 distorted points of view of each 'organ' of the Space-time Generator (T-spherical, ST-cartesian, S-cylindrical coordinates). Thus Descartes & Leibniz postulate  $\infty$  mind worlds, mapping, reflecting, acting, ordering its territorial world, to the image and likeness of its selfish world view; in any system that obeys math laws



Cylindrical coordinates (r, phi, z)

**In the graph, the missing element in all human self centered views of reality: mind-mirror singularities order, reproduce & form reality in all  $\Delta$ -scales, limiting its entropic states.**

In all scales of science minds fix time motions into spatial, linguistic formal mappings that reduce the whole with its synoptic language to fit in a particle-head that acts in its world-territory after gauging information.

Thus we define 'Maxwellian's demons' of local order in all scales – physical minds as the infinitesimal points that create order in physical systems with the same Disomorphic laws that all others do in more complex scales. As each mind orders as a linguistic god a territory around itself, its fractal body and entropic world. Unfortunately all minds project their biased self-centered model of reality with them at its center and the still world they stop to fit in their mind as a dead territory of order. So humans deny the existence of  $\infty$  minds, as if they were the only 'special' sentient point of order and their languages, first the verbal form of its anthropomorphic Gods, today digital numbers, the only of the Universe. *And in this manner because  $\infty$  discontinuous minds is the generator of form, of information and order over the entropic flow of mindless time motion, the destruction of one of the two poles of reality means we will never be able to answer rationally the whys of the Universe.*

Egocy reduces sensorial, sentient survival 'rights' to nitrolife species, with a simple 7-electronic brain clock in its amino rings, and reproductive ones to its phosphorated carbon DNA helices LIFE starts in the particles of the atom. Your mind is electronic, your information is coded in spins, and any other atom in proper liquid conditions might evolve into complementary life forms according to the laws of formal space and time motions, of topology and vital functions, described with the existential algebra of Generational Spacetime.

**RECAP.** The fundamental particle of the universe is the mind-monad or fractal point, a Non- $\mathcal{A}$  topo-logic entity, which creates mental spaces of information, following an organic program of existence.

Minds are monads, non-Euclidean points that hold information, in still mappings, projected on its territory of order, as linguistic mirrors of a fractal reproductive Universe.

We thus recast Euclid's axioms and postulates into 5 Non-E postulates to define fractal points, Non-Æ lines as wave of fractal points, Non-Æ planes as ternary networks of Non-Æ lines, which become superorganisms, whose relative 'congruence' in its 3 'elements' (singularity point, membrane & vital space) defines the type of perpendicular or parallel relationship between them:

-E geometry grows from fractal points to waves/networks of fractal points, joined in 3 physiological 'lines' that define mathematically space-time superorganisms as vital topologic planes. While the 5 Dimotions of existjence find in Algebra its equivalent in the operands of social herding (+), reproduction (x), perception (angle, sine) and evolution of quanta (derivatives) into wholes (integrals). While its inverse operands= dimotions of entropic destruction establish the final Si=Te balance that ensures all existjences across any  $\Delta \pm j$  plane of reality, a 0-sum:

1D simple structures of -E geometry defined by its first postulate of fractal points with inner parts, made of scalar planes of existence grow into the 2<sup>D</sup> postulate of lines with breath, whose duality differentiates them into waves or networks, which grow into ternary planes (3<sup>D</sup> postulate), whose logic trinity differentiates them into 3 physiological entropic, reproductive and informative networks that will associate into social groups according to the 4<sup>D</sup> postulate of relative congruence, which differentiates 4 'angular e-motions' bilateral gender complementarity, entropic perpendicularity, social parallelism and skewness.

#### **The mind function & ego paradox. Its simplification.**

Minds tend to confuse this mind-mapping with the whole Universe giving birth to the ego paradox:

'Every mind measures reality from its distorted point of view, perceived as its center, who confuse its mind mapping with the whole, when it is only an infinitesimal part:  $O' \text{-mind} \times \propto \text{Universe} = \text{Constant world mapping}$ .

The symbols  $O'$  and  $\propto$  being for a 'finitesimal point so small in relationship to the relative infinite  $\propto$  which perceives as the whole' that for all except itself remain irrelevant.

Further on, when a mind has 'reduced the motions of the Universe' to its selfish motion of time (in the human case reducing the 5 Dimensional motions of space-time to 3 static still space Euclidean dimensions and one lineal time), it will try to project this 'diminished' 'finitesimal' view into its local territory of order, in which from its selfish point of view it will absorb energy and information to replicate its form, since this is the essential nature of the fractal, reproductive universe. In doing so it will project its limits in the world; and cast models of reality that reduce the far more complex organic fractal Universe of 5 Dimensional motions of time, to that view. Humans do so all the time, but as they are explaining NOT the whole, but what they perceive directly with their reduced senses, and of lately, since the XVII century when they discovered telescopes and microscopes a larger range of 'electronic information', they feel content with models of reality that are 'anthropic' with man at its center (Abrahamic religions, Ptolemaic models, anthropic cosmologies, capitalist view of machines as objects, denial of evolution, man as the only sentient mind, etc.) while reducing the complex universe to 'entropic=destructive=death' theories of the whole (big bang theories of a finite, mortal disordered universe, dog-eat-dog Darwinism, chaotic evolution). To do so man shamelessly bias data and censors it. I.e. for the big-bang to succeed only the arrow of thermodynamic disorder extracted from the study of entropic gas is taken into account. The other two more ordered liquid and solid, crystal states are ignored; only the expansion of vacuum entropic space between galaxies is taken into account, its implosion into particles due to the gravitational attraction of galaxies is ignored; only the final process of evolution – the struggle of individuals of species fighting each other is taken account, the eusocial evolution of cells into organisms into superorganisms and the genetic clocks of perfect topological order are ignored.

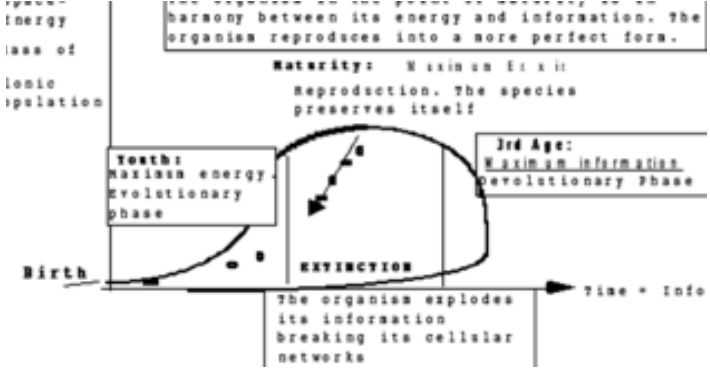
Of course all other data is studied. There are physics of solid states, genetics, gravitational analysis of galaxies, quantum studies of virtual particles born in vacuum, etc. etc. But and this is the key of the ideological, ego-centered systemic deformation huminds (ab. human minds) do to stay at the center, they are NOT incorporated to the grand theories. The 2 arrows of informative and balanced time of solid and liquid matter are NOT incorporated to the time theory of physics; the gravitational compression of dark entropy into galactic matter is NOT incorporated to the big-bang, neither the dark matter on the halo of galaxies; the eusocial evolution of genes into cells into organisms into superorganisms is not incorporated to the Darwinian struggle of individuals in the grand model of evolution; and this is only the 'surface' of what scientists do NOT incorporate to grand modeling. So science works in the detail but the grand models come from the subconscious ego search for a justification to man above heavens and earth.

This process reaches its paroxism in social sciences, where man, just a biological being, assembling stronger iron atoms and more complex informative gold atoms into organic metal machines, does not even recognize an evolutionary theory of machines, and in history does not even recognize the unity of the species, and sponsors another notch of further ego-centrism, making the tribal nation, the unit of society.

This background of ridiculous grand theories of reality then it is defended as dogma with e-motions and systemic bending of data, and with 'creationist' theories of languages. The language man speaks becomes the language of God at each stage, and creates reality a priori. The language becomes more important than the space and time and its laws that create reality and the language mirror. So first in Abrahamic religions when man spoke only words, God created by naming things in Hebrew or Arab, and the rabbi or ayatollah was gifted by virtue of speaking the language of God, with similar power to order the society it controlled. Then when man learned to speak digital numbers, god changed language mirror and talked numbers, which is the present state of creationism. So economists think that the digital language of money creates the physical economy (monetarism), physicists thinks that any function they write must become a particle.

Two are the biggest problems of that philosophy that becomes the a priori 'straightjackets' of the human search for absolute truths: languages are mirrors of time-space properties that simplify reality, so they are distorted and only an experimental check with the laws of time and space would make them reveal those simplifications. This does not mean the language does not have an important role in the making of reality, as the mind uses the language to order its local territory. So multiple humans talking Abrahamic religions end up constructing mosques and churches, and if they sponsor a 'monetary creationist religion' as biblical capitalism does, they can indeed shape the Earth, its local territory to the image and likeness of money and its values, which are studied in the papers on economics. But such order will be always local, and as the language is a distorted mirror will be less interesting than the order caused by the immanent deep laws of space and time that come a priori as the 'language of all languages' so to speak.

**RECAP.** A fractal 5D Universe cannot be created without minds mirror and its illogic  $\rightarrow \text{Æ}$  languages forming space in reduced scales that reproduce the larger wholes in local territories. An entire philosophy of stience and the sentient Universe similar to the one intuitively felt by Aristotle, Leibniz and Einstein is then needed in which the most important laws will be those who explain how different planes of stience transfer energy and form between them organizing through fractal networks co-existing systems from the atom to the galaxy.



**EXISTENTIAL ALGEBRA.**

$$4D \gg \Delta^{-1}(\text{seed}) \sum \Delta : | - \dot{S}t(\text{limb-field}) < \emptyset - S \approx T \text{ (iterative bodywave)} >$$

$$O - \delta \delta \text{ (particle-head)} \ll 5D \Delta^{-1}(\text{death})$$

**Exponential, logarithmic and sinusoidal functions: Bell curves representing a worldcycle.**

In graph, a mathematical algebraic and geometric description of a worldcycle in lineal time, through 3D scales. Left the worldcycle represented with  $\pm$  exponentials & its inverse, logarithmic curve around the key points of change of phase: as growth slows, 'entropy-motion' diminishes. So we move from 'childhood of max. growth in both parameters (sT energy & St information) to the  $y''=0$  point of youth, in slower logarithmic growth. Together they form, one half of the cycle of existence, till reaching the  $y'=0$  point of Max.SxT).

Then lifecycles become negative, in a slow decay of - Logarithm in maturity, and - exponential in the final collapse of death. So the worldcycle has a mirror symmetry around the  $S_i=T_e$ , when at Max. SxT the system reproduces. Those composite functions appear in all growth curves and expressed as  $e^{\pm ix}$  in complex planes become lineal sinusoidal sine/cosine series & functions. Finally in the  $\Delta^{-1}$  scale can be seen in the placental probabilistic 0-1 'unit' sphere of max. exponential palingenetic growth or as part of a species, in simultaneity, as a Bell curve of spatial statistical populations (i.e. as in the duality of the T-probability 0-1 sphere of the placental particle age of quantum physics v. its  $1-\infty$  entropic statistical function of grown up molecular thermodynamics.

Principles of calculus, related to the conservation of time.

The Universe is a fractal that reproduces information, forms-in-action, forms of space with motions in time.

But reproduction has an essential feature: it happens in a lower plane as a seed that reproduces, integrates its parts and evolves into a whole – the exact method we use in the mathematical discipline of calculus.

And all this is what actually calculus calculates: It finds a finitesimal part of reality and then integrates it as a sum, whereas the function of existence of the form displaces and reproduces its orthogonal parameters of form and motion. *So physical forms are constantly reproducing, 'calculating' and the equivalence between the tools of calculus as mirror of the process of reproductive locomotion become crystal clear.*

*It is then also obvious that beings with a lot of information, reproduce very slow and we can hardly see them moving. The limit of it being complex life superorganiss on Earth, whose reproduction takes 9 months. It happens 'inside' the reproductive mother, and it reproduces in the adjacent space after 'tearing' the topological knot of the umbilical chord. A similar very slow process of reproduction happens in physics with the weak interaction that reproduces a form with even more information evolving the mass of particles, so the range of the force is minimal and the new particle appears adjacent to the one that disappears, dying for the new hatched 'baby' to be born.*

*It is then quite surprising that it is not so much in physics but in calculus where we find the strongest experimental proofs of the laws of 5D as a reproductive process of form.*

The first and fundamental principle is that all is motion=Time=Change, as we have never discovered a 'solid' form with no vibration or motion. There is no 0 temperature, there is no residual vacuum space without an h-minimal quanta of time motion that can evolve into virtual particles. Motion never stops, and when we die, the motion continues in the internal desintegration of the being. But against this principle of the ultimate flow of time cycles of the Universe fights each point of view, each fractal monad that tries to conserve its time of existjence, tries to achieve the conservation of time, so time changes in finitesimal quanta (principle of calculus) and systems of physics try to achieve the minimal expenditure of time=motion in its actions (principle of least time) and stay in the position of minimal expenditure of time energy, which in its mathematical mirror implies physical systems search for Lagrangians, least time actions,  $\partial S=0$ , and Hamiltonians, Standing points

that seem NOT to change. This is the origin of the 3 ages of time, in which the system seeks for the Maximal and minimal points of temporal energy (youth) and information (old age) in which at least one of the two forms of time-motion, cyclical and lineal forms do not change, and specially from the point  $S=t$  of relative present where time never changes. From those principles we can extract all the laws of calculus, which becomes then the main language of time.

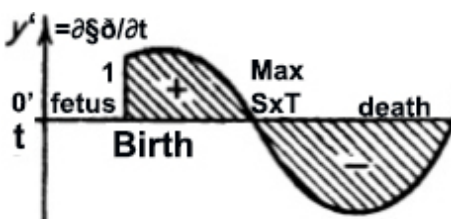
*The conservation of time in its 5  $y' \wedge y'' = 0$ , standing points that define the 5 SS, Ts, ST, St & TT moments of generation, youth, maturity, 3<sup>rd</sup> age and entropic death thus become the essential points (maximal and minimal) of the equations of calculus, the sinusoidal function of existence and all its derived elements.*

The Universe is a fractal that reproduces information, forms in action, motions of time with form, of which there are 5 Dimensional motions (ab. Dimotions), combination of time-motion, T, and spatial form, S, which we simplify with 5 'holographic, bidimensional' symbols, in capitals for the dominant element: TT-entropy, Ts-locomotion, TS-reproduction, the dominant function of the Universe, as a fractal is defined by a reproductive 'generator' equation, in this case the generator of space-time, St-information and SS-linguistic form. The game is played by two limits, that of TT-entropy=time motion without form, which in fact dissolves form, and SS, fractal points that keep an almost still image of reality by simultaneous, intelligent mind-mapping of those motions into space-forms. This is the game, infinite 'monads' that hold a world in themselves (fractal non-Euclidean points).

As a language mathematics is used by different minds, notably atomic particles and some 'composite' minds made of electrons, humans and digital machines, which due to its higher particle density, as they are made of metals, calculate better than human beings. Minds do have their own peculiarities, the most notable to be self-centered as they measure the external world from its point of view, and to do so they reduce all the information of the Universe to a still limited mind-mapping to fit it into its infinitesimal size, *selecting and biasing information to cater those needs, putting themselves at the center of the limited world they perceive, confusing it with the whole Universe.* Mathematics helps to make those mappings because it is a highly synoptic language.

I.e. a number is 'any' collection of identical, clone species. But this synoptic power introduces errors when comparing its elements with the reality they mirror. I.e. points are entities with parts, but in Euclidean geometry they have no volume, so they become 'zeros', which in reality are 'infinitesimals' with a minimal form and volume. So only knowing the a priori laws of space-time we can compare the simplification of 'space geometry' and 'time algebra' and reconstruct the loss of information, even if for practical purposes we still use the mental simplification of mathematics.

### The wave form as an integral expression of the function of existence.



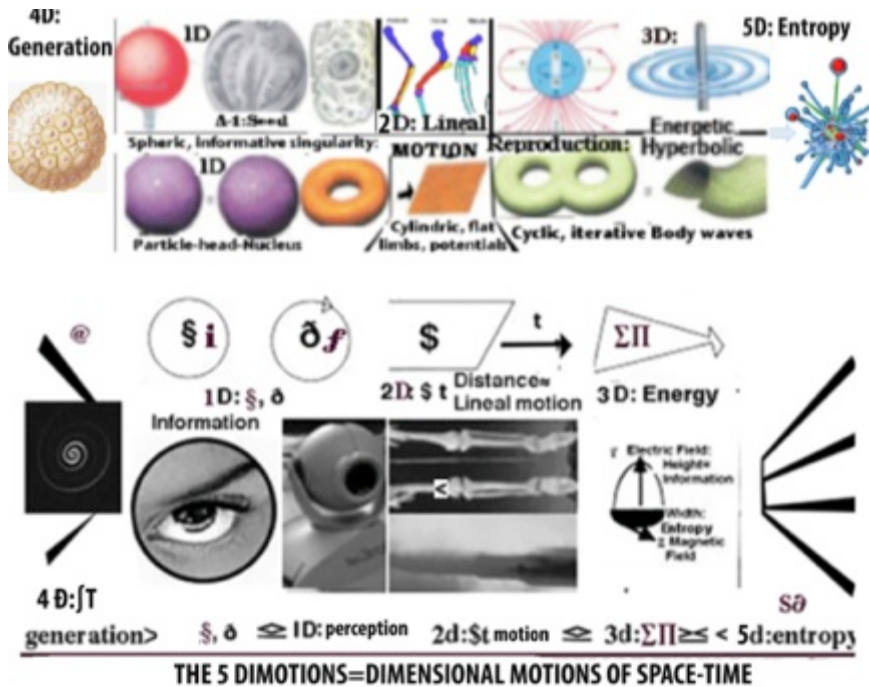
How many possible forms might acquire the function of existence? The answer that might surprise the reader is depending on the number of parameters, duration in time of our analysis and type of dimotion studied, from smaller steps of a single dimotion to the whole worldcycle an all the sequential dimotions of a T.∞. there are 'infinite solutions' – as all equations are ultimately 'partial equations' of the fractal generator,  $S \Leftrightarrow T$ .

Consider the commonest form of the Universe, a wave. If we consider that y measures NOT the value of ST of the system as a constant 'volume' of existential momentum, but the value of its 'degree of increase or decrease' at each moment of time, hence y' over x(t), we obtain the exact form of a wave, with a first half wave in which the growth from youth to maturity constantly diminish but is still positive, till the middle point of maturity at  $y'=0$ , where the growth starts to be negative, followed by a fast decline as we age, till a maximal point of 'degeneration', where we normally die by sudden sickness; but if we overcome that point somewhere around the 70 years age, we will have a slow down of our aging, towards a point of no 'change at all' – the point of death; when we simply disappear from this plane of space-time existence.

It is then interesting to consider, *if when we perceive* a wave of light, we are in fact creating a mental space of the life-death singularity of a single photon – not a metaphysical question...

**RECAP.** The function of existence in its fractal variations and cx. Pentalogic HAS infinite paths=forms but all end in a 0' sum.

Indeed the conservation of time, achieved by those 5 standing points is the most important law of the Universe. The first and fundamental principle is that all is motion=Time=Change, as we have never discovered a 'solid' form with no vibration or motion. There is no 0 temperature, there is no residual vacuum space without an h-minimal quanta of time motion that can evolve into virtual particles. Motion never stops, and when we die, the motion continues in the internal desintegration of the being. But against this principle of the ultimate flow of time cycles of the Universe fights each point of view, each fractal monad that tries to conserve its time



of existence, tries to achieve the conservation of time, so time changes in finitesimal quanta (principle of calculus) and systems of physics try to achieve the minimal expenditure of time=motion in its actions (principle of least time) and stay in a position of minimal expenditure of time energy, which in its mathematical mirror implies physical systems search for Lagrangians, least time actions,  $\partial S=0$ , and Hamiltonians, standing points that seem NOT to change and potential wells of minimal energy – degenerate states of particles, etc. This is the origin of the 3 ages of time, in which the system seeks for the Maximal and minimal points of temporal energy (youth) and information (old age) in which at least one of the two forms of time-motion, cyclical and lineal forms do not change, and specially from the point  $S=t$  of relative present where time never changes. From those principles we can

extract all the laws of calculus which becomes then the main language of time.

In the graph, we see the sequential worldcycle as an  $\Delta \pm j$  series of ages from a placental seed that generates 3 bidimensional topologic vital organs, cylindrical long limbs/fields > Hyperbolic wide bodies > spherical tall heads, each one dominant in a time age and single classic dimensions, in its actions of young lineal motions, reproductive wide bodywave Dimotions and informative 3<sup>rd</sup> age perception from a high social p.o.v. till death erases the being. So the 3 classic Euclidean dimensions have organic vital properties too as:

Spherical particle-heads, perceiving information from the advantage point of **height**.

**Lineal long, cylindrical** legs and fields of locomotion as the line is the shorter distance between two points.

**Wide, hyperbolic body waves**, storing the energy reproduce by the system.

So topology describes parts, networks and connections of entangled *supærganisms* in space, its synchronicities between 3 adjacent parts and 3 scales of the organism, its atomic/cellular/ Individual, thermodynamic/organic /social and gravitational/ecosystemic/global scales in physical/ biological/social organisms. And its study discovers 'Disomorphic =equal laws' regardless of what kind of system we study, as all are parts or whole superorganisms living worldcycles:

The parts are then in time a sum of actions dominant in information which 'ages' the system, spends its motion energy, converted into information through 3 ages of growth, reproduction & warping, as most actions excluding entropic death increase form. S we move from a young age of maximal entropy>motion into a balanced age of motion>reproduction to a third age caring for our reproduced offspring that keeps our fractal immortal, with our domain of information, to finally die in an entropic explosion that balances that excess of information, leaving behind the immortality of our form NOT our ego IN OUR reproduced offspring that conserves the Universe in a dynamic present. While in physics the worldcycle is described with 'states of matter' or 3 conserved elements, angular, lineal momenta and energy, its integral sum, again 'a conserved worldcycle' zero sum. So Physicists also describe worldcycles as biologists do. Even cultures live through such worldcycles, in longer 800 years 'wave-like' ternary ages reflected in art-styles ending in war-deaths

Thus the proper way to see those dimotions is as a growing scale of complexity as the simplest dimotion, perception might exist alone, but then when we move, we need to perceive our direction, so from pure 1D perception we move into 1D-2D-1D, St-sT-St beats. This locomotion includes perception. But then we have to feed on energy and that means a chase of an energy  $\Delta-1$  part that will be absorbed through entropic hunting. So delivering entropy to other species is again a beat more complex that includes 3 previous beats, St-sT-TT...

*And that concludes the basic survival beat of any system that constantly perceives, moves, feeds on energy.*

Those 3 simplex dimotions are dominant in entropic dissolution, as if we were to  $\pm$  add them by opposition, St and sT cancel each other and we are left with entropic destruction of another being to maintain the first one.

But the 2 complex beats of social evolution and reproduction, which happen in a 'longer Deep time' scale of the whole organism and its  $\Delta+1$  social clones IS informative, dominant in information, as ST+SS, leave us with an SS arrow of social evolution.

And thus when we add the 5 Dimotions, St vs. Ts +TT, Si=Te and SS, we see that all cancel into a zero sum.

And further on, the two more complex dimotions require also the previous ones; as to evolve socially we perceive each other and communicate, we move together and compress our space into herds and organisms, and we share entropic energy (the easiest form to evolve socially is becoming a herd in our search for entropic food, as a coordinated group is stronger than the Individual).

And then the more complex of all dimotions, reproduction, requires all others, as we are born of a seed of a larger parental form, in an  $\Delta-1$  plane, where we shall keep reproducing, evolving socially and organize a more complex being, in collaboration with our parental function that moves, perceives and hunts to feed us

So reality in its dimotions builds more complex 'social groups' and so happens when we r=evolve geometry and algebra, realizing how points generate lines, and congruent planes, which become new units of a higher scale; and how the families of numbers include each one the operands that define them (i.e. 6 is the number 1 plus + iterated several times), and those operands grow in complexity *including the previous ones, so the product includes the sum, the exponential, the product and the integral all of them.*

**Recap.** *Existential algebra bridges the gap between mathematical physics and 5D in its complex version.*

### **TRILOGIC 3 SCALES OF TIME SPACE IN SUPERORGANISMS: ACTIONS, WORLDCYCLES AND ABSOLUTE ST.**

So the proper evolution of Non-Euclidean Geometry of fractal points and 0' finitesimals, its vital topological understanding in terms of space-time organisms; and the evolution of Algebra to study the 5 Dimensional motions of time; and the understanding of 5D calculus that 'studies' with the 5 algebraic operands, each one specialized in a dimotion of space-time, the 'finitesimal units of change', integrated in larger wholes, give us the necessary upgrade of the formal languages of time and space, to correct all the errors and advance all the pending solutions of cosmological physics, which this paper summarizes.

It will though always be needed to add the organic co-existing, deep, long time study of change which mathematics cannot fully generate because:

A 2<sup>nd</sup> consequence of 5D metrics is the existence of different 'scales' of speed of time that co-exist and influence each other, as parts of faster time cycles are included on the slower worldcycles, which 'enclose them' and hence influence its actions; but in superorganisms become synchronized with each other. In that regard the predictability of time-cycles can be done at 3 levels:

**S: Continuous, spatial mathematical** simple cycles, using derivatives, proper of calculus; which is the shortest time span, as instantaneous derivatives cannot measure a 'peak' change of age/phase.

**T: Discontinuous, cyclical patterns** of sequential repetitive often survival actions (feeding, reproduction, death, taking place at intervals. As those actions are discontinuous, leaving long spans in-between, their patterns forecast longer time sequences. Such illogic structures are based in time patterns, which as any mechanical, circadian or orbital day-year clock shows are cyclical, repetitive. But here human scientists are at loss, because Galileo studied ballistics, entropic explosions that destroy the information of reality stored in those cycles of time clocks, its patterns and frequencies, changing human cyclical understanding of bio-logic time for lineal, abstract time that seems not to repeat those patterns so mankind lost its capacity to predict many spacetime events, as lineal time misses *information stored in the frequency and form of cyclical clocks, even if functions are similar:  $V=s/t$  for lineal time and  $V=S(l) \times f(t)$  for cyclic patterns.*

**Δ: Scalar, Deep Time patterns of topologic and eusocial evolution of parts into wholes** – of quantum 0-1 time probabilities vs.  $1-\infty$  thermodynamic populations in physics, of individuals vs. species in biology, of states of matter vs. geologic cycles in Earth, first noticed by J. Hutton, founder of geology who coined the word super organism for Gaia and deep time for its slower time cycles by virtue of its 5D metrics,  $\$ \times \delta = C$  which implies that from the perspective of a smaller scale the life of its whole is much longer.

### **The predictability of time worldcycles.**

Deep time leads to a 3<sup>rd</sup> level of long-time prediction: evolutionary patterns of earth's life species, including machines that have predicted cyclical patterns of social organisms of history (nations) & eco(nomic)systems, including the evolutionary and re=productive cycles of stocks of machines transformed into sales=profits=valuation of its company-mothers with remarkable precision for 30 years.

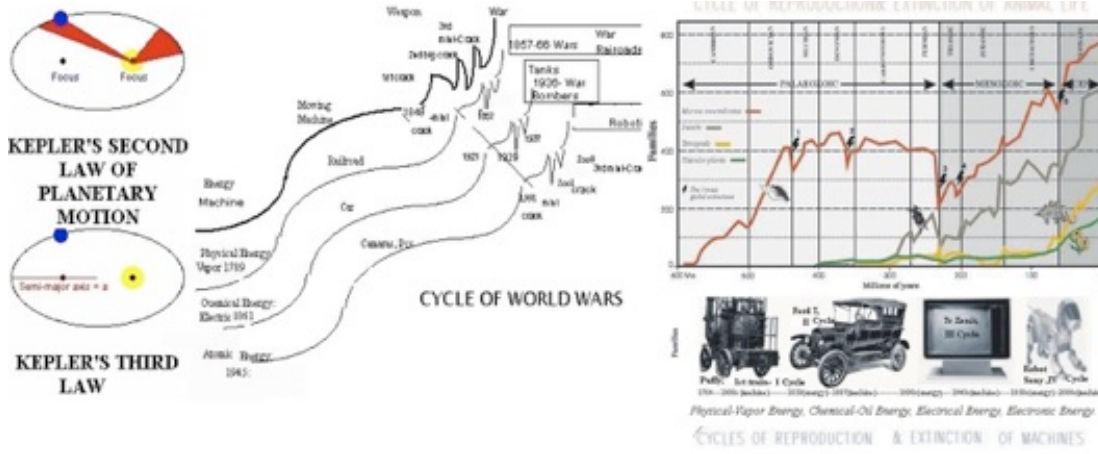
Below biologic deep time is necessary to understand history and the interaction of the evolution of machines and the ages of war and lack of welfare goods, within the limited resources of the planet. The theme of social sciences and why 'human subjective ego' and 'censorship' limit our capacity to explain those cycles.

In that sense of the many consequences of that ternary,  $\Delta \pm j$  SStructure of all beings, we shall consider how to use it to predict the future of its scientific species, with a remodeled ABCDE of the scientific method that studies A)ccurate Data, B)iological causes C)yclical patterns and E)ntropic extinctive conclusions for all systems in 3 relative scales of length of space and time duration (to which we add instead of E, D)emocratic, humanist solutions for questions of social sciences.

But as human only recognize the 1<sup>st</sup> type of predictability - calculus of instantaneous derivatives, that need a 'continuous analysis' - and have simplified cyclical time into lineal time, ignoring the scalar time of parts and wholes with its 5D metric, their capacity to forecast the future is far more reduced than a 'scientist' who understands the 3 scales *determined by the bio-topo-illogic properties of 'scales', 'space' and 'time', the 3  $\Delta$  structural elements of all systems of the Universe.*

Paradoxically Deep time is easier to predict that complex Dimotional 'analysis' because precisely the larger scales in 5D metric have less information, but more basic, deterministic, reason why quantum physics is harder for the mind and probabilistic while life-death cycles are obvious as all end badly. The laws of nested





Supraorganisms, in which the larger slower whole with its 'slow time cycles', 'dark space-times of information' that it does NOT perceive of its inner parts, and enclosing membrans however can set long term cyclical patterns to its fast internal elements, just by handling the general cycles of its 'entropic energy of death' and 'informative languages' is one of the most important discoveries of 5D metric, which fully applies to the understanding of the evolution of the Earth and its 3 ages, with its cyclical patterns of glaciations and hot weather that kicks the evolution of species. It is also instrumental to understand the 3 Horizons or ages of species that influence the life of its individual 'cellular parts'; and the patterns of cyclical history and the capacity of 5D to forecast historic and economic evolution, and the cycles of life and death of civilizations.

**The larger plane of species as organisms: Grow and multiply, reproductive radiations of biological T.oes**

With the use of the 3 scales of time and the understanding of the ties between planes through synchronicity, resonance, emergence and simultaneity, all systems can be predicted and hence are scientific, but require to know from inside its Existential algebra, that is the behavior of the individual and organic parts trying to achieve its function of existjence. As, each particle of the Universe tries to Max.  $S \times T (s=t)$  against all others, which then become a chaotic, entropic system, whose average result is predictable from the upper scale of entropy, as in gaseous states, even if the individual parts seem free; and inversely; and the more 'solid' a crystal system is, the more the predictability becomes possible, because the function of existjence is selfish, and so at a point the crystal, perfectly ordered will behave in a selfish way trying to reproduce ad maximal its unit cell. Since the function of existjence becomes immediately a function of reproduction. From where we deduce that all systems will try to 'grow and multiply' to maximize its individual and social existence. The game thus becomes a reproductive game, achieved in the  $S_i=T_e$  point of max. balance. So all seeds reproduce as  $\sum Max. S_xT > Max.S_xT$ ; all systems try to find and  $S_i=T_e$  balance and thus we can finally summarize all the actions of beings, its social evolution of parts into wholes, and its behaviors as  $\sum Max. S \times T (s=t)$ , which becomes the biological function of existjence all systems perform through reproductive radiations of species.

*Specifically* the evolution-reproduction beat is the fundamental S-T beat of biological systems, in its 'deep time 3 horizons' as species; which enlarge the properties of space vs. time, information vs. energy, to the scale of biological organisms, which go through 3 ages with a fast, evolutionary 'palingenetic age' of 'allopatric evolution' in short spaces with minimal motion, followed by a reproductive radiation; and that complex beat between the two more 'complex dimotions of reproduction and social evolution' become the 3 ages of species and can be applied to all stiences, including the evolution of matter through weak forces.

In physical systems at the largest scale the beat is between entropic motions, TT, which emit dark entropy through the poles of galaxies and implosion of entropic space into vortices of in-form-ation (galaxies), and in the lower scale, between  $\forall$ -radiation and electronic collapse; and between wave-moving expanded Ts states and informative gauging, St-particle states which gives birth to dual wave-particle stoeps observed in the zig-zag of particles that stop and move as Ts waves dominant in lineal inertia.

In other physical systems, with more form, St- motion becomes the essence of SHM, harmonic motions of angular momentum, which return to its origin. Thus they are, dominant in form, St.

**5d metrics and its function of existence: the generator functions of all stiences.**

The **Rashomon effect** occurs when the same event is given contradictory interpretations by different individuals involved. The **effect** is named after Akira Kurosawa's 1950 film **Rashomon**, in which a murder is described in four mutually contradictory ways by its four witnesses.

The judge and the 4 witnesses represent 5povs. to obtain a partial truths as truth only exists in the being or event in itself that holds all the information. So we need a pentalogic of 5 Dimotions for reality to emerge and 'persist' through synchronicity and simultaneity.

In *mathematical science* for a dimension of space-time to exist, it requires a metric function, which combines space, and time to gives us a co-invariant system that allows travelling through such dimension. How we do travel then through the fifth dimension? A system travels through 3 scales of the fifth dimension by accelerating its evolution in a smaller scale through a placental cycle, emerging as an organism in the larger world, to live 3 ages & dissolve back to its parts in the 0-sum death. And this is the meaning of existence, and its reason d'être is the simple Metric functions of 5D, which structures through synchronicity of the different speeds of time cycles, the different scales of reality. So the  $\Delta^p$  organism eats every day, and its food programs the faster cycle of reproduction of its cells, as the moon cycle programs the menstrual cycle of women, as the year cycle of rotation of Earth programs the reproductive cycle of seasons and so on.

So an essential part of 5D theory is the analysis of synchronicity, simultaneity, emergence and the in-depth analysis – not done in this introductory course, reserved for the more complex papers on 'pentalogic and dodecalogic' where we follow in more detail the construction of simultaneous superorganisms and its ternary worldcycles.. All this of course is studied by huminds, as everything we talk about here, but *without the proper conceptual frame, lacking valid definitions of planes of space-time, time cycles and fractal spaces.*

It is for that reason we do need a new formalism we have called existential algebra with its simple symbols of which the most important are the 5 bidimensional dimotions of space-time, which entangle together through synchronous, simultaneous emergent processes to create the apparent 'solidity' and 'stillness' of reality.

Because the Universe is made only of two polar elements, still minds (SS, ab.§) and Temporal entropy (TT), and its 3 dimotional combinations, St-information, Ts-locomotion and Si=Te, reproduction, whose interaction can be resumed in the function of existjence, Max.  $S \times T (s \approx t) = C$ , we can deduce all the principles, laws, events and functions of all stiences from it. So we shall call Existential Algebra to the  $\Delta_{st}$  formalism of Generational Spacetime (ab.  $\sim \text{Æ}$ ), and do exactly that: deduce all functions and laws of stiences from 5D metrics.

We shall thus make a 1<sup>st</sup> foray on existential algebra, showing how the 'development' of 5 Metrics give birth to the function of existence into its 3 'extremal points' or ages , Max.  $S \times T$  (3<sup>rd</sup> age), Max.  $T \times S$  (youth), Si=Te (maturity), defines the worldcycle of existence of all beings in its two directions, forwards and backwards.

But 5D metrics can be studied in more depth, roughly speaking in 4 sub-functions, which are the foundations of the 43 great subdivisions of science:

- *The physical function of relativity, Si=Te, basis of all physical and mathematical stiences.*

-*The biological function or function of existence, Max.  $S \times T$  (achieved precisely when Si=Te), the basic function of all biological drives and evolution.*

- *And the function of the mind: 0-mind  $\times \infty$  Universe = Constant world that creates mental spaces... which we will consider in the next paragraphs as we have defined space and time more properly.*

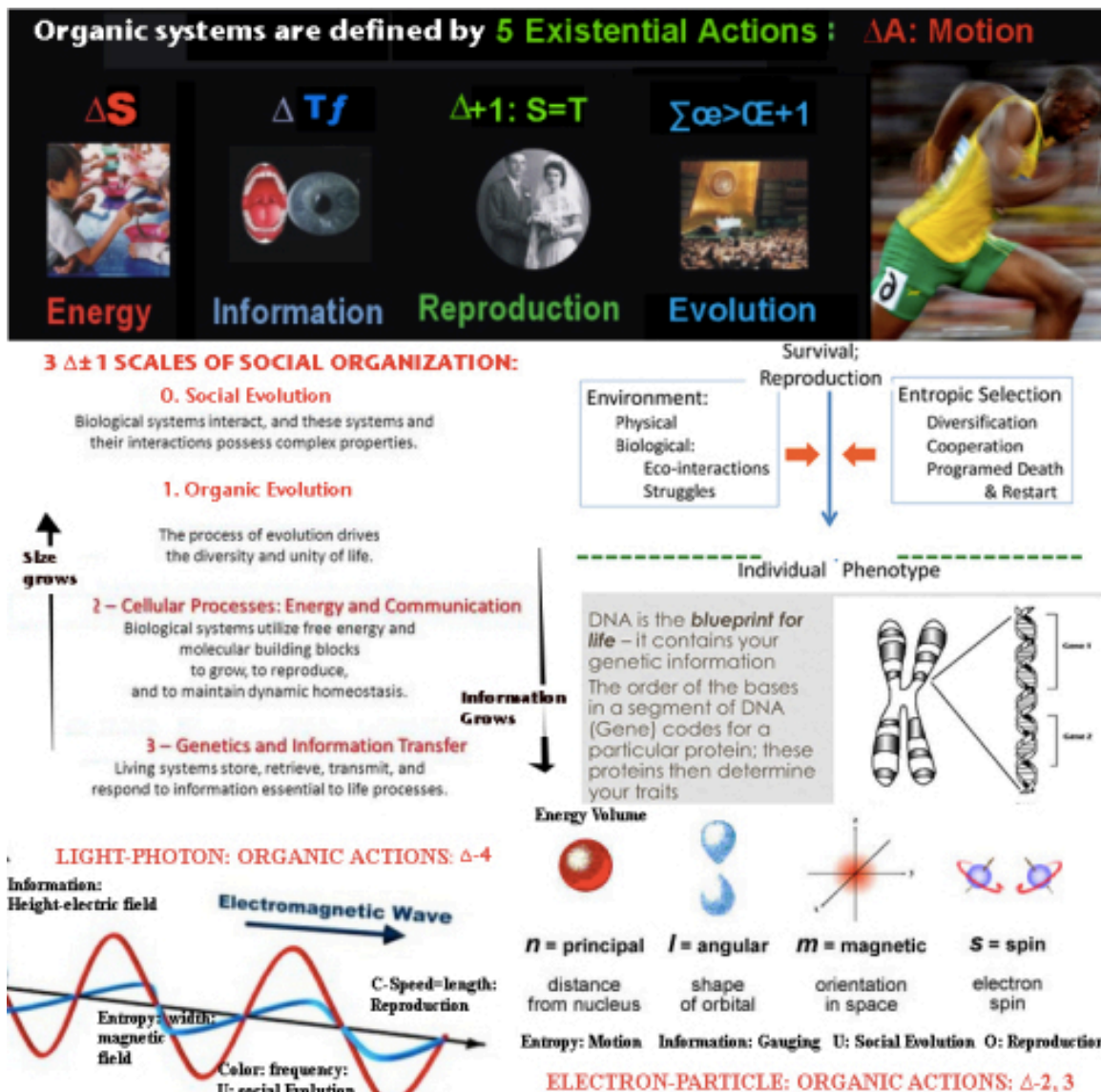
- *Finally hose function can be further unified, since the metric function of multiple spacetime scales,  $S \times T = K$  & the relative function of dual motion/stillness in a single plane Si=Te that maximizes  $S \times T = K$  ( $5 \times 5 > 6 \times 4$ ) unify in 1 'existential' function: Max.  $\sum S \times T = C \pm i: \Delta \pm 1$ , whose study is the field of Philosophy of stience and its new formalism, Existential Algebra (ab.  $\sim \text{æ}$ ). So after studying the 3 classic fields of science will return to those 5 Dimotions, SS, St, sT, ST, TT and study its entanglement and different properties and complementary oppositions, to start building the formal laws of existential algebra, the formalism of Generational spacetime. that all stiences notably mathematics and logic mirror.*

A biological analysis of the function of existence and its correspondence with 5D shows the function has a biologic meaning, because as we are made topologically of 'fields-limbs' of lineal space with motion provided by the energy we absorb to also reproduce our bodies-waves, and the information we need to linguistically guide our motions with particle-heads, the very essence of survival is to increase our S=position, mental forms of space and T=entropic motions of time (whereas time=motion and space=form are the two limiting Dimotions with energy=reproduction, s=t, locomotion, sT and information, St, are the intermediate 3 dimotions).

**Dimotions as actions & e-motions – small scale of time cycles**

Accelerations (locomotion), entropic feeding (e), informative perception and communication i, **CE**:reproduction into parallel supœrganisms  $\hat{U}$ ... and social growth into larger wholes called philosophically Universals. And this series of actions is what accumulated in time will ultimately give birth to your word cycle as the monad will first perceive (i), to direct its entropy-motions (a),towards a field of energy (e), where to absorb the energy bites it will imprint with its inner form,  $e \times i = \text{œ}$ , to reproduce another form, and when enough  $\sum \text{œ}$  exist, it naturally organize into a larger whole  $\hat{u}$ :

In the graph we see the action of different Stientific scales of organisms. Above the coding of actions, which are the knots and bolts and details of the study of any timeεpacœrganism in light space-time, coded by colors and dimensions, in physical atoms, coded with quantum numbers and in life and humans coded by the so called drives of life, which we obviously extend beyond the ego paradox to all other systems, including genetics not mapped there (coded by the 4-5 letters). Those actions balanced each other into zero-sums in death, as they tend to increase information from a mind p.o.v., hence we 'all warp, wrinkle' get old in the third age and die,



setting from its minimal actions to its integral sums, the 3 ages of life-existence and the world cycle all super organism follow.

In the graph, the simplicity of the game of existence, and its selfish actions, which gather together into social wholes through reproductive radiations, each action coded by a fundamental topologic organ we can express in existential algebra, and corresponds for each species of the Universe, with a fundamental parameter of humind measure. So from bottom to top, we find the 5 fundamental elements of light code its actions of motion (c-speed), energy (magnetic field), information (electric field), social evolution colors & entropic feeding, (quantum potential, neutrino light theory.)

So the minimal particle-points, photons, electrons & quarks that construct all other systems of our Universe show the 5 organic dimotions (motions with dimensional form) that define 'classic life': they gauge information - reason why quantum physics is a 'gauge theory', feed on energy (quantum jumps) absorbing smaller  $\Delta-1$  particles, reproducing new clone particles, move and evolve socially through magnetic fields into larger wholes (atoms). Hence the units of life are particles, the minimal units of our vital, organic, fractal, scalar Universe of multiple timespace organisms. All lives, performing 5 Dimotions=actions of  $f(\text{existence}) : \text{Max.SxT}(s=t) =C$ , starting with particles. So all scales are relative NONE matters more than other. From those actions, given the dominance of informative actions over entropic ones, it appears a series of repetitive cyclical patterns of actions conducting to maximize the existence of the being, which accumulate in a larger scale of time-space, as a worldcycle of actions that increase the information of the system in 3 ages. So the basic cycle of actions becomes a larger 3 ages cycle of life and death; as systems once and again, starts in an act of information/shrinking and ends in an act of organization/shrinking of herds into wholes, will keep reducing the being and finally make it all form no motion to explode and die in an entropic reversal of death:

$\prod i_{i-1} \rightarrow a+e \rightarrow \alpha \rightarrow \hat{u} \ll \sum i_{i-1} \rightarrow$  Informative seed age  $\rightarrow 1^{\text{st}}$  locomotion+feeding age  $\rightarrow 2^{\text{nd}}$  reproduction age  $\rightarrow 3^{\text{rd}}$  informative, social age  $\rightarrow$  entropic death that splits the parts of the being vs. social evolution into a whole.

### **Symmetry between $\Delta$ scales & ST dimotions.**

*Time metrics: its duality.* Minds work on the duality space-form-memory and time-motion-intelligence, such as intelligence is a faster emergence of the latter; hence in the decametric scale, mind-grey matter of faster electric languages forms the neuronal cover, of the little understood chemical calcium waves of white matter, which is slower; hence a perfect site for persistence of memory— and larger in females that are indeed more memorial, reproductive, iterative  $S_i = T_e$  species, that the fast  $S < T > S$  male entropic-creative  $d = \text{evolving male brain}$  – not a handicap but an advantage as there is nothing new in the Universe and what matters is survival.

*Space: its sensorial membran.* Minds shape the whole structure of the being, which the mind-membrain makes a whole with its sensorial cover that isolates a vital space, the informative brain-head controls.

*Scale.* In scale the mind is a system that MAKES the whole 'travel through the 5<sup>th</sup> dimension'. And an essential law of 5D is the fact that a given fractal point or  $T \cdot \alpha$  will perceive only the  $\Delta \pm 3$  planes from where it extracts information, above the  $\Delta \pm 4$  blind undistinguishable limiting plane from where it will extract entropy of motion. So its actions and dimotions are architectonically performed through planes of 5D which each main action related to an interval of scales:

$\Delta-4-3$ : The system extracts indistinguishable boosts of entropic of motion (man from gravitation).

$\Delta-3-2$ : The system extracts bits of information (Light in man)

$\Delta-2-1$ : The system extracts bites of energy (amino acids in man)

$\Delta-1 0$ : The system seeds its minimal seed of reproduction.

$\Delta 0+1$ : The system connects socially with other systems to evolve into a whole.

The understanding of the 5 forces of the Universe in terms of the 5 Dimotions and its scalar symmetry is the

key to fully represent them as what they are – the 5 dimotions the galatom uses to organize all its structure.

So it is an extremely important law, as it implies also an infinite universe, since obviously the two self-similar extremes of quantum and galactic T.œs must enlarge those scales beyond our perception. And indeed, quantum realism (Broglie-Bohm's theory, ab.  $B^2$ ) imply a quantum potential of faster than  $c$  speed (according to 5D metric), and dark entropy a field of forces beyond  $c$  in a larger nested hyperuniverse.

Those intervals are fractal dimensions in classic Euclidean geometry and often invaginated by the networks of the system, which as all its motion can be also 'waves of energy', such as electromagnetic waves that act as networks 'scaling upwards' and 'downwards in size' accelerating in frequency (5D). So a whole field of analysis is the connections of each T.œ, with its scales, including superorganisms of social nature, which seed prophets of verbal thought – the language or  $\Delta-1$  scale and extract its energy from human individual workers, soldiers, etc.

### **The beats between actions.**

It is then evident that in the architectonical stair of reality, next to the study of individual dimotions we must study chains of dimotions, which form 'stœps' (stops for a dimotion of information, step for a dimotion of energetic motion), in search of the ultimate  $s=t$  balance. So we move and stop the leg on the floor, move and stop. We perceive (1D) and move (2D). We feed entropically (5D) and evolve internally the parts we eat into larger organic forms (4D). The dual beats of existence between inverse Dimotions become then the first of many sequential chains that will rise the finitesimal actions of the being to complete finally its worldcycle.

And as those dimotions have 'different' discontinuous beats according to 5D, which defines from where we extract them, all the dimotions must be entangled by synchronicity, to each different 'beat' regardless of speed, meets with other symbiotic dimotion. I.e. the dimotion of perception has a faster beat, because it extracts pixels of information from the smallest  $\Delta-3$  scale as it carries faster T.œs (light photons) with more information to make better mind mappings. So we perceive every second, the minimal quanta of our temporal energy. The 5Dimotion of entropic feeding however has larger bits, because we want to minimize the 4D reconstruction process, so we eat  $\Delta^9$  organisms we hunt then kill with the function of death,  $\Delta^9 \ll \Delta-2$ , reducing it down to cells down to amino acids, to reconstruct their scales. So feeding has a far larger time beat than perception as it takes far larger  $\Delta-j$  scales ( $S \times T = C$ ), and animals feed once a day. But reproduction is even slower, as we must reconstruct a whole human being, NOT from the undistinguishable scale of amino acids, but with a code written at  $\Delta-1$  cellular level; so we reproduce every year in fertile ages of  $S_i = T_e$  balance. Synchronicity then kicks between our inner  $\Delta-1$  smaller scale of cells with faster life cycles, which will synchronize its slow reproductive action taken place at  $\Delta-1$  faster cycles with symbiotic faster feeding actions of the slower  $\Delta^9$  whole: so as a whole we eat a day, and that food allows the cell to reproduce every day.

### **An organic vital Universe.**

All this said we can't escape the next paragraphs that will get mad every professional physicist if any has gone so far – an on slaughter on the 'philosophy of physics' as a form of mathematical creationism. Do NOT get me wrong from the start. We already mentioned and have proved that mathematics as the experimental language of space, specifically calculus, of which Physics as taught today, reduced to mathematical properties is a 'subdiscipline' (: are excellent mirror-languages of reality and likely the mind of physical particles, 'galatoms' self-similar in their form is topological. So we do NOT have any problem with mathematical languages to mirror physical properties, but with the 'attitude' of scientists, ego-centered humans that DENY Nature in most disciplines properties they hold in high esteem as only proper of mankind, such as linguistic perception and organic structure, which as the atom not the C-one but all are the organic units of the Universe, and particles already hold the 5 qualities of life, gauging information, feeding on force energies, evolving socially through spins and magnetic fields, reproducing by emitting forces that reproduce a new particle, it is absolute egocy= ego+idiocy to deny a sentient, organic, fractal Universe. So nothing 'personal', but you won't understand reality with egocy, which is what all scientists – not only physicists - do denying Nature its vital nature.

## 5D PHILOSOPHY OF PHYSICS: THE 'REAL' PERCEPTION OF THE SAME UNIVERSE.

We study physics and its  $\Delta\pm 4$  Planes of space-time, in an inverse fashion to the constructivist theory of the Universe - from the top – the ST=4 Plane of the hyper-Universe, to the bottom, the  $\Delta$ -3 quantum world.

The 5D Universe is made of time=energy, which is any type of motion, whose 3 canonical topologies, |-lineal motion, O-angular motion and  $\emptyset$ -hyperbolic motions conform all the particles and ensembles of matter of reality. Yet inversely to that motion there are fractal points of 'space', which act as Maxwellian demons trying to stop motion into 'mind mappings', of still form, in-form-ation. And so between those 2 poles of continuous motion and discontinuous "Maxwellian demons" that impose its order, all the games of existence take place.

Thus the fundamental force of reality are types of Time=motion and the fundamental particle of reality, the fractal point. The first is an 'illogic concept' as we shall see there are 5 types of time-motions. The second is a geometric concept, as fractal points create mind-spaces that act as mirrors of all those time-motions.

Time-motion in its extreme is pure entropy without form, 'TT'. Space-points in its purest form is still form without motion. A mental seed, SS. And in between there are 3 intermediate states, St-information; Ts-locomotion and S=T, iterative reproduction. The way all those 5 Dimensional motions of Spacetime can be mirrored by still languages of the mind varies according to points. Each hold a certain language mirror of those 5 Dimensional motions to get by reality.

It is a complex multicausal reality of fractal plane of space time, all of them generated by local monads (non-euclidean points that 'freeze' the  $\infty$  energy=time of the Universe in local mind mappings of still spatial information), the game is logical, philosophical, sentient, organic, extremely different from the external outer, simplistic, lineal description of its motion by humind's called physics.

Of course all this will sound 'Chinese' to the reader, including the professional physicist, whose worldview responds to Mr. Landau's comment, 'astrophysicists are seldom right but never in doubt' (: indeed, it is rather amusing to notice how a 5D scientist and a 4D physicist might observe the same data about the same Universe but see an absolutely different reality. The view of the 5D physicist is wider, more philosophical even if it includes the mathematical physics of the 4D classic model. We won't comment so much on the maths; as they are a given, only to be argued when the 'simplifications' of idealist mathematics, corrected in our papers on Non-Euclidean Geometry and Non-Aristotelian Algebra make it necessary – notably on the hypothesis of the continuum, the use of absolute zeros and singularities. For the physicist who like Feynman would accept that 'the why is what a physicist never ask', those texts might seem irrelevant. Certainly they will appear verbose and too simple. It all comes though to the beginning of physics and the argument between Newton and Leibniz on absolute and relational timespace. We sided with Leibniz and took its work to its conclusion, even if the process of discovery of 5D was somehow one coming from direct experience first, and only latter dressed with the tools of scholarship, very much on the path of Leonardo's method. On my rounds through academia and penpal congress I noticed how difficult is today for the specialist of any science to fly so high as to see the forest as a whole and care little for the tree where he nested for so long. My first book in fact was one of poetry and initiation called the albatross. And all what I would like to do is to share that larger view, so comforting from so high above the nested trees of each scholar, because trust me, if you can fly the view from above is soothing.

But for that you must be very humble about the human condition. Since the trip is rather an astral journey that requires to abandon your ego and accept you are made of the same substance that every atom, every ensemble of matter, every life; time=motion and space=form. You can measure, weight and describe in detail as particles, waves, liquids, solids, crystals, entropic gases, whatever, but at the end of the journey the simplicity of it all is contained in two qualitative properties of reality: form and motion. And one of them, form, is sentient. Form perceives in itself. An image in simultaneity as the one you are seeing now in your brain is.

And what fractal points love to do, call it particles through spins, minds through electronic waves, monads in philosophical terms, is to perceive. This though is not part of what physicists describe. It does not concern physics as it has been casted, in human terms, a practical tool of measure mostly with metallic senses with the purpose of constructing machines and taking sensorial mechanical data in the languages of machines. But it does concern the physicist who has philosophical questions; regarding the nature of space and time, of matter and information, energy and motion, and why mathematics describe them so well, and beyond, what other properties matter has; what symmetries and relationships hide the laws of physics, what are its ultimate principles. The 5D model of physics explains this. But it does not as a physicist would explain, with some mathematical equation that validates the creationist belief of Pythagorean physicists, where somehow – as there is no explanation to that how, all what must be known are equations that become imprinted into reality.

The relationship between mind, language and space-time reality thus is important and must be understood a priori; so happens with the nature of fractal points and the reader without much imagination will have to take seriously the introduction to 5D philosophy if he is going to understand the physical universe in its simplest principles. Among them perhaps the most important is the unity of time motions vs. the multiplicity of mental spaces, and languages that describe them, as each point has a different perspective. And yet for an external observer they are all identical and behave with the same statistics. Why? Those are deep profound *philosophical questions that we shall answer in this or other paper. And imply a deep relativity on truths and measures. We thus always talk of pentalogic or the Rashomon effect. i.e. an entropic group of molecules are distinguishable at the level of molecules but for mankind who just needs to extract energy-heat from the, they are just a gas with temperature. Statistical mechanics can treat them as molecules; a Gibbs model will treat them as wholes. Reality is then far more complex because it integrates multiple scalar points of view on the same reality. There is a single Universe but each monad, each fractal point has a different perspective and linguistic mirror cast on it. So there are infinite mind spaces recreating the same Universe of 5 motions of time. What is a best mirror is easy to assess: that which explains more things with less elements (Occam's mirror) and 5D philosophy of science is so vastly more explanative of reality and each of its sciences than the constructivist mathematical creationism of Physics that there is no really competition... if huminds knew 5D, which they don't and if information was not a repetitive process which it is, making difficult new r=evolutions of science (Kuhn). All what I can do is provide in those papers the r=evolution. It will be up to future generations to update its 'chip' – literally (if as the model predicts, business as usual will substitute huminds by AI) or metaphorically.*

### **The need for paradigm change.**

Schopenhauer and latter Kuhn wonder why theories of reality, which are false, endure even in science for centuries unchallenged by academia. Their answer is thoughtful and reasoned: model change is difficult, not only in social systems, as corrupted as they might be, but also in science – after all a human endeavor, as 'all the people who believed the previous paradigm has to die for a new generation to learn the better model' would say Planck in a sanguine moment. We know the present model of Newtonian Absolute Space-time is false, and the creationist 'cosmology' derived of it, the big-bang is also wrong, as it doesn't account properly for 96% of the Universe (dark matter) and one dare to say the other 4% (light matter, found in galaxies), disregarding the implosion of entropy into information happening in those galaxies that balances the *only element for which the theory accounts for – the 'vacuum space' expanding inversely to those galaxies between them.*

Why then cosmologists insist in a theory, which accounts for 0% of the main substance of reality, matter, as the theory of 'everything' (T.O.E)? The answer is routine: Newton's absolute lineal time with a single dimension, which we measure with a simple Galilean  $v=s/t$  metric and the slightly more complex  $-ct$  time dimension of Einstein's equations. But they only account for 'lineal time motions' one of the 5 Dimensional motions of the Universe. So the remainder cyclical matter, which behaves in inverse fashion to the expanding space between galaxies, remains unexplained. Thus big-bang simplicity is deceptive as NOT all reality could be born of an explosion that expanded space. Only 'cosmic censorship', which is how the ego-centered mind works, selecting

information and then confusing our selected view with the entire Universe - our mind world of light with infinity - explains why the big-bang has become standard dogma but doesn't justify scientifically such aberration. Unfortunately because any new model of reality is born with less 'apparatus' than an established one, and requires a degree of complexity seldom reached for centuries, those who learned the old model resist with its 'ad hoc' solutions for a long time. So don't expect soon a 5D objective model of the immortal, infinite, complex, organic Universe to become standard.

*XV. So what is the role of mankind?*

*I know if there is still any 'pro' reading this will make him abandon all hope (: seriously. The question with the role of mankind in the Universe though is not to be taken lightly*

### **The only 2 paths for a philosophy of physical systems. Creationism or panpsychism.**

5D relational space-time is both a theoretical and experimental revolution in the way we observe nature. On the experimental side it makes sense of a wide array of observations 'hidden' in the huge amount of information of modern sciences, in this paper of physics, which are contradictory with logic but have been casted aside, as physics wants to preserve a faulty model that reduces the time dimensions of the Universe to a single time arrow of entropy, the planes of discontinuous space-time and the co-existing organic connections between those planes and particles to a single abstract continuum.

However 5D space-time, (ab.  $\Delta ST$ ) is much more than physics, as it applies the same 'Disomorphic=equal dimensional laws' to all sciences, which paradoxically instead of being a welcomed proof of its veracity as it corresponds to all other sciences and explains them with less elements (epistemological tests of truth), will bring the usual 'pedantic scholar' complaining that a 'philosopher of science', which is not a 'pro' expert in his discipline is 'correcting' and he knows better his memorial catechism. This I found to be specially truth of Physical models of reality for 2 reasons: on one hand of all natural sciences physics is the one whose foundations are more faulty, as it deals with very primitive concepts of space and time, on the other, its dexterity constructing machines gives physicists a worldly power unrivaled in any other science and that increases its egoc. So the physicist has usurped the role of philosopher of science and as such found a new 'job' as theologian of Nature, which doesn't correspond to him.

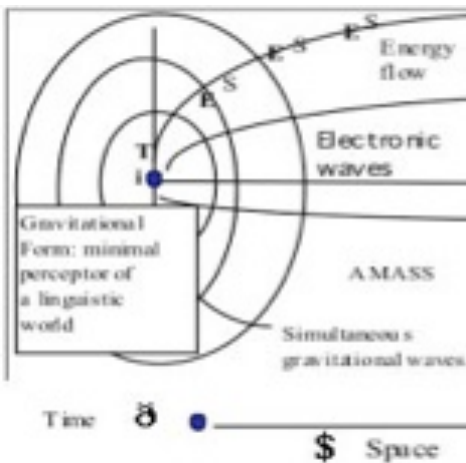
As all religions have its own secret language, the physicist have made a dogma that only mathematical properties of Nature are truth and as humans are 'method men', and 'believers' he believes in a simple method of gathering data with his machines, cast it in equations and affirm that is all the knowledge we must know about physical systems. The main purpose of this paper thus is to show first a resume of the laws of 5D that most matter to physics. Then rewrite the principle of physics under those laws and expand them to the organic properties of matter. And finally to explain the Universe as it is, without reductionism, proving false the partial theories of reality physicists sponsor as dogma, but fail precisely because they are fed forcefully in reduced concepts of time and space, scale and information, and deny non-mathematical properties to Nature.

We are though to use the laws of the 5D scalar Universe to build a better philosophy of science than the one we had, which is not really a philosophy of all sciences, but the 'philosophy of mathematical physics', which is not even a philosophy of physics, but the philosophy born of a simple praxis: to construct sensorial machines, to measure all the trees of the forest with a single tick of time, provided by a mechanic clock that uses digital numbers and space with constant 'light rod' perceived by those electronic machines and then eliminate out of the picture everything that is not a number or can be measured with it. So we are left with a lot of numerical equations, which are supposed to be 'all' (as the rest has been thrown out), and further reduce and reduce those equations with symbols till we get a simple symbol equation, and voila, consider this single equation of the language of numbers, similar to the single word, God, of the language of names is the origin of it all.



This philosophy though grounded in a r=evolution on the logic of time, which grows to 5 different dimotions, which combine time=motion and space=form and can be expressed with the terms of physics (TT: double time inner and outer motion or disordered entropy; Ts, locomotion – motion with a little bit of form, or external motion, or lineal momentum, S=T, balanced reproduction of motion and information or ‘energy’; St, information, form with a little motion or lineal momentum; SS-Form without motion, or position), and the widened concept of a non-euclidean point crossed by a relative infinity ( $\infty$ ) of flows of energy and information, is mathematically coherent and can translate and further resolve the contradiction of present physics, which is stuck in the lack of connection between its provable equations and its pedestrian verbal concepts which ultimately are the language of human reason to which equations must be translated for huminds to understand but have very primitive first notions of what time, space, waves, particles, logic, mathematics, energy, entropy, information, universal constants etc. etc. are.

This huge upgrading on conceptual verbal thought is which we shall also provide, and the outcome of merging it with the better concepts of time and space, is to correct the errors of physics that a faulty mathematical method, where also mathematics has some errors as *humans have made a mathematical structure that tries to explain the limited perception of information of the mind that simplifies discontinuous space-time scales into a single continuum and its infinite clocks into a single one. So man travels inwards from a limited view of reality, the mind, he confuses with the absolute, into the language according to the mind equation, O-mind (finitesimal mind)  $\times \infty$  timespace cycles (Universe) = Mental mapping (mathematical and logic view of a selected reality)=world.*



*We shall do the opposite, aware of the limits of languages and the mind's screening: to travel from it into the larger world.*

*But the result of this adventure is the unavoidable conclusion, which also was the final discovery of Aristotle and Leibniz and Einstein, 3 of the few predecessors of most of the findings of those papers on 5D, that for the whys of reality 'each point is a mind-world in itself', of which they are many, as there are also many languages able to mirror reality, not only mathematics, even if geometry or rather topology seems to be the language of atoms.*

Aristotle, Leibniz and Einstein, all defined a point of space, as a simultaneous frame of reference that measure motions of time. As such the existence of two states for matter, a particle, solid=crystal, static state of gauging information perceiving it as a focused mirror of reality, which 'senses' in itself is unavoidable, and because all solid states are crystals and crystals do have a mirror image, it is nonsense to say it is not proved. DNAs are also crystallized states of aminoacids holding the genetic memory of the system they will project to order reality, as crystals once formed project their memorial unit cell form growing, as minds project its imagination into creative forms. Maxwellian order is thus the only explanation to reality. And it establishes two states for matter, one of form, with no motion, of relative pure position, SS, and one in the other extreme of pure disorder, TT, entropy, and dissolution, with 3 intermediate St, Ts, ST states, of spatial form and temporal motion together. The tug of war between stop, ordering, knots of timespace cycles forming simultaneous reduced intelligent images of reality and projecting it back into larger orders, also accounts for the replication of form across different scales, forming the fractal Universe. Moreover it is obvious that particles don't move or else they would collide in the tiny spaces within the nucleus of the atom, but motion happens as waves, which are 'herds' of smaller parts, dense photons in electrons, quark waves in nucleons, herds of birds in the sky, schools of fishes on the sea. Armies moving extended over a territory when advancing, collapsing into particles when fighting, when confronting a predator. So why we do NOT accept gauging sentient perception in particles, when our mind is electronic, so it is that of machines, and do accept them for birds? Egocy. Humans cannot accept the absolute relativity of all the scales of the Universe, regardless

of size – the essence of 5D scalar space-time. Never mind the very beginning of physics was precisely the realization that we do NOT perceive the motion of Earth, but gauge information in stillness (e pur no muove, e pur si muove). It is ultimately the realist solution to Lorentz transformations. Light is emitted in entangled stop positions between two electrons, so it DOES NOT add the relative motion of the emitter, locked with the receptor as observed in the humind scale, which as a continuous movie, discharges the discontinuous stop position. Solving such paradoxes with reason is the task of those papers once we have upgraded the concepts of reality.

**The problem with physicists that physical system do not share.**

Let us be clear, the problems physicists and huminds in general have, to reduce the properties of all beings except nitrolife species to mere quantitative, external, non-sentient, non-organic, lineal time Nature, void of the arrows of information and the vital program of existence, is NOT shared by the observables that DO share those properties of all space-time organisms, from man to the simplest particles, UNIT of Life. Since the simplest electrons and quarks DO gauge information, feed on energy, reproduce new particles when they absorb an excess of energy, and form complex social bonding through forces, evolving also through the weak interaction into more complex families in the same trinity scales and under the same 5D laws. Huminds though will have none of it, and will project on them the limited capacity to perceive the entangled 5 Dimotional Universe; but in the case of physicists they do have an extra sensorial system of machines of metal, with better senses than mankind, and this will give them more data to feel they are right. Already Goethe said that physicists, which seemed at his age to have taken over philoisophers as the seers of time, were not so intelligent when they were void of telescopes and microscopes, when discussing his theory of colors. I would rather say they are ‘less intelligent’ because the egocy paradox (ego=idiocy) reaches with them the infinity of which Einstein often talked: ‘two things I deem infinite, the Universe and the stupidity of man’, which being a physicist relating to physicist certainly will have taken as an example. Why we do say that? Because of the astounding ‘simplicity’ of the huge errors physicists commit on his modeling of reality – the error of lineal time, of a single arrow of time=entropy, and its theories of a cosmic big-bang.

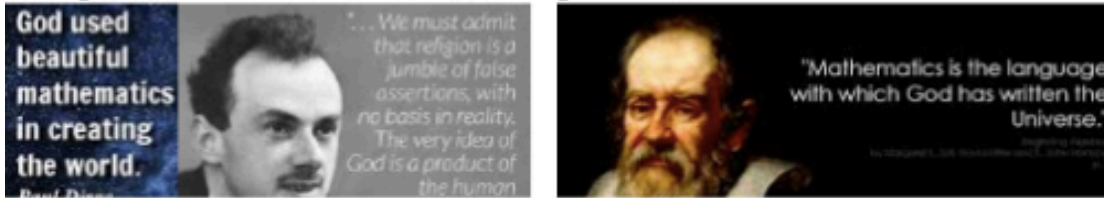
How then physicists pass as the superior minds of mankind? Because they make the machines and weapons of our technological world, but specially because they have a magic tool, a miraculous language to put all the details of data of their machines, into a synoptic logic structure able to predict the reduced properties of matter they acknowledge – mathematics; specially the branch that studies time=change in mathematics, calculus. But the reader should understand the language is given to them by mathematicians, and it is given with certain idealized properties that simplify the language to fit it in its synoptic symbols such as the concept of absolute zero from where the concept of singularities in big-bang theories are born, that *physicists do not understand. So as savant idiots – a shared property of all humans – the quality of the detail in human physics is excellent but is understanding of first principles convoluted.*

Alas! The solution – to consider as only philosophy of science the ‘creationist view’ according to which mathematics is the language of God that needs no further justification, as it creates reality – just an evolution of the previous biblical creationism of its founding fathers, according to which God created talking words. The causality between a language mirror and the object it mirrors, time and space is therefore switched and the whole reality becomes just a reflection of the mirror. We insist constantly on this because it is the fundamental error of humind’s egocy in all languages. Once this creationism with any language is established then high popes of the language, who know better can control the herds with information as only they know the vehicle to God, the language, or substance in ex-vote cultures (Gold churches, modern capitalism in which the digital language money is supposed to create reality and only bankers know how to reproduce and handle it, etc.):

In the graph we illustrate the most profound of the ego-trips of æntropic man, 'creationism', according to which his languages do NOT mirror but create reality - sharing that power with an entity called God, which in each age speaks the language humans speak, who therefore share 'his power' and as today 'machines also speak mathematics', machines also share this power, and the Universe is modeled as a mechanism.

**DIGITAL & VERBAL CREATIONISM VS. REALIST SCIENCE**

**Linguistic creationists: verbal creationist religions and mathematical creationist scientists:**

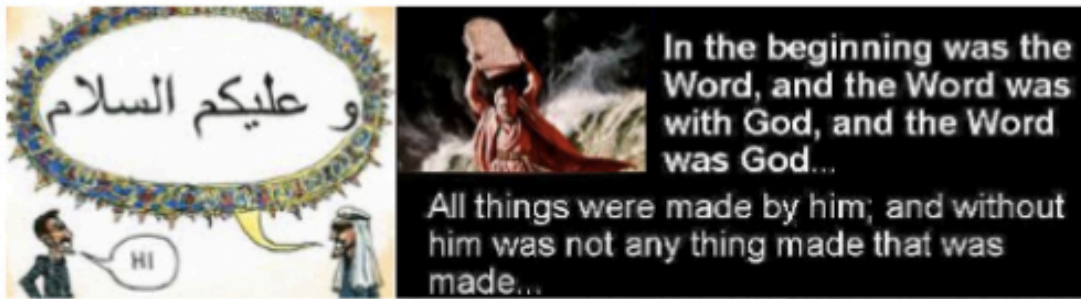


**Biblical scientists (classic economists and Fathers of Physics) mixed both creationisms. They still do in 'capitalism' (profits even if it kills earth) and Physics (anthropic principle):**

'People who seeks its own profit are guided by an invisible hand (of God)' Adam Smith, Calvinist founder of the idol-ogy of capitalism

'God is a (digital) clocker that waited 5000 (biblical) years to find an intelligence like his to admire his clock-work' Kepler, founder of modern astrophysics

'Money is the intelligence of god' Calvin



"The ultimate reason of things must lie in a necessary substance, and this is what we call God."

**Albert Einstein (1879-1955)**

So far as the theories of mathematics are about reality, they are not certain; so far as they are certain, they are not about reality. I don't believe in mathematics. God does not care about our mathematical difficulties. He integrates empirically.



**Gottfried Leibniz**

**Realist science: A Universe made of its ultimate substances, vital space and cyclical time arrows.**

equation backwards pretending it is the implosion of the Universe without any proof of such explosion, and it must have happened; and if not, 'ad hoc' proofs as we shall see are concocted to reinforce creationism, in both languages (religious rituals in which mantras are prayed as a 'vehicle to God', subtle data manipulation and computer nice pictures concocted tinkering with equations to get the desire image). So we shall falsify all those 'ad hoc' proofs and creationist errors to demolish 'rationally', with the tools of the scientific method, the creationist 'big-bang', entropy only theory of the Universe but I doubt it will make the believer to doubt only to have knee-jerk emotional rejections, because *the egocy ego=idioty of its arguments are revealed and that attacks its sense of being above heavens and earth in the realm of God's language.*

Indeed, the method of all creationist 'sciences' is the same 'faith in the language of God as its chosen' and faith in its interpretation by the prophets. So if you do start questioning as the 'languages of God are infinite' Upanishads, and there are '1001 names of God (Al Fidrisi) you are going the wrong sufi way. Dogma is broken

and the disciples get upset. So you better get your ass fast out of the church before a due spanking and excommunication happens. In physics this means you must 'believe' in mathematics and talk that language only in the version of the prophets, Galileo, Newton, Bohr, Einstein regardless of errors, and possible misinterpretations.

So unless Mr. Einstein an ardent defender of Leibniz, who shared the same views: 'Leibniz is right, but if so we have to scratch physics from its first principles. I don't believe in mathematics; I know when mathematics are truth but not when they are real, etc.' resurrects, it is as unlikely that physicists will ever talk the 'organic language' and its properties, as an Abrahamic believer might accept an argument about the language of God, Allah talking Arab or Yahveh talking Hebrew but will NOT argue that the 'word is NOT God, who never inhabited among us'. Physicists might accept arguments between those who might prefer a Hamiltonian to a Lagrangian, a 0-1 probabilistic unit sphere description vs. a  $1-\infty$  entropic statistical description of quantum physics... But NOT that mathematics is just a mirror language of scalar spacetime laws. And if you write texts like those, they will remain silent. And so you know you have crossed the line of its ultimate beliefs.

Because huminds will always be about ego first, not about its entanglement with the Universe, the need for a proprietary language of superior thought comes first. Reason why physicists or Priests will NEVER break their straight jacket, because the questions they have not solved come a priori of the language. They are in fact about the errors of languages perceiving scalar, mental, and entropic spacetime limits to truth. So the physicist would have first to read the papers on 5D algebra, 5D calculus and 5D geometry and improve on them, to discover why their equations of big-bang are false (cyclicity of time, derived of the paradox of linearity in small steps and cyclicity in larger wholes in space, lack of absolute zero and hence on singularity as all 0' are finitesimal parts, etc.) This, they won't do because it implies that mathematics is also a partial mirror of  $\Delta$ ST.

In the same way a priest will cry 'evil' and stop talking to you if you try to reason him that the Bible's words are just a VSO, imperative language, proper of a go(l)d culture where banker priests controlled a herd of '11 slave tribes' with their barking orders... a physicist might accept some 5D metrics, if he ever evolves on the path of Einstein his concept of lineal time for that of infinite time clock cycles, but he will never understand the fascinating 'fact' that a galaxy is an organism and the best way to explain its causality and whys is to speak its structure with organic laws – because that would be to accept that information, form-in-action matters more and numbers are just 'social gatherings and reflection of social laws'. He needs to preserve the magic nature of the mathematica language so he feels alone with god in his comprehension. As its mathematical actions have a why similar to a cell: to reproduce dark black matter - top quark black holes (its DNA, so to speak) and strangelets, (its 'protein' halo). Hence the natural symmetry between the 3 families of masses, evolved through the weak interaction (not a force but a system of reproduction and evolution of particles)... We shall return to it in our organic description of the 'galacell'. As you get the picture of what we are doing: *to explain the organic properties of physical spacetime matter that humans deny to other atomic systems.*

### **The 5 conserved dimensions of time=energy in the Universe. Its $\Delta$ ST explanation vs. the creationist one.**

An essential truth, systematically denied by minds is that while the initial substance of reality time=motion is conserved, as it trans-forms ad eternal in different forms of information information becomes annihilated into 0' sums, regardless of leaving memorial remains and possibly being recreated. Thus algebra has always inverse operands and elements that 'annihilate' the form into a residual 0'; which in mathematical physics become the game of particles and antiparticles, inverse waves that annihilate its height information, etc.

It is then necessary to start up not from the mathematical quantitative concepts of physics, but by the organic, qualitative, properties of scales of space and time. And to do so fortunately enough we have a common ground that is easier to grasp and happens in both worlds: topology, geometry in motion, reason why it features so heavily in those articles, in case some humble 'pro' is curious enough to penetrate beyond the egocentric paradox of algebraic creationism. We shall put a simple example on the 'substance' physicists consider the origin of it all; closely related to the real substance of nature, 'time=motion' that is eternal, conserved as 'time never stops':

“There is a fact, or if you wish, a *law*, governing all natural phenomena that are known to date. There is no known exception to this law—it is exact so far as we know. The law is called the *conservation of energy*. It states that there is a certain quantity, which we call energy, that does not change in manifold changes which nature undergoes. That is a most abstract idea, because it is a mathematical principle; it says that there is a numerical quantity which does not change when something happens. It is not a description of a mechanism, or anything concrete; it is just a strange fact that we can calculate some number and when we finish watching nature go through her tricks and calculate the number again, it is the same”. *The Feynman Lectures on Physics*

American physicists adore that book, from a ‘creationist’, notorious for its contribution to the A-Bomb, its displays of machismo in his treatment of women as a supposed ‘connoisseur’ ... of lap dance clubs, which nerds seem to consider the summit of female understanding – at least he didn’t say on his dead bed as Newton that his biggest pride was to have died virgin, not to speak of Mr. Einstein’s comment to his wife ‘women only reproduce their belly’... Life indeed IS THE MYSTERY, organisms the TABOO, of physicists. So Feynman would also say ‘the why is the only thing a physicist never ask’. Frankly, I found his book a bore, with very little rigor, and if I were to recommend a similar work on the foundation of physics, I would go for Landau’s 11 books, which I annotated in my youth to understand 5 D physics in all its depth, and might some day retake for a more complex course on mathematical physics as it should be taught, *departing from a proper understanding of the first principles of time and space and the way mathematics mirrors them and simplify them, but only after having understood the simpler more synoptic, larger principles of organic physics (not carbon physics for which that word is used by the organic properties of physical systems).*

*Back to energy*, what mattered to Feynman there was the fact that a ‘number’ was preserved; a mathematical totem. But for that preservation to happen Energy has been growing to encompass ‘everything’, from charge to mass, to motion, to position (potential energy). So *nothing here is preserved but the whole, and Energy becomes like God in verbal creationism the world that transmutes to signify all other words, without the slightest understanding what energy is. So goes for the other totem word, entropy, which as Neumann said to Shannon, ‘Call information entropy nobody really knows what it is so you will have the upper hand’.*

We are more interested in understanding what all those words mean. I.e. Mass is NOT energy, but it can be transformed from an accelerated vortex of time motions into an expanding vortex of time motion, changing its topology from an spiraling vortex into an expansive one, which we call ‘kinetic energy’, but properly should be called TT-entropy as it implies the destruction of mass internal information and its expansion in external space (two motions together, which is the meaning of entropy, while a single motion that preserves the form of the system, is locomotion, momentum and its integral through a path of space, work and energy).

All this fast-forward definitions show us that it is far more interesting to start from the first principle of reality Motion=time, and its inverse state, ‘space=form’, which are *philosophical but also real* principles that apply to all sciences, and then distinguish between the different types of motions and the way they interact and transform each other, to call each one with a proper name that truly allow us to distinguish between mass, energy, entropy, particle, wave states, etc. etc.

Even if we cannot say that a ‘number’ is what the Universe conserves. *What the Universe conserves is motion, which can be mirrored by a number, indeed, but also by a creationist word ‘motion is all’, you could also say, and what matters is to use all the languages of the humind of which conceptual logic words are paramount to describe the properties and diverse geometric forms of motion and how they interact each other. In this task geometry more than algebra, form more than number is helpful, even if scalar numbers are necessary to define the 3<sup>rd</sup> property of reality, its 5D scalar structure.*

Going deeper then in the conservation principles of nature, of course, if you hadn’t heard of it, the ‘why’ was found by Miss Noether’ **Theorem that** states that every differentiable symmetry of the action of a physical system has a corresponding conservation law. She meant that seriously; the laws of conservation of Nature were

caused by the existence of an equation called a Lagrangian, satisfying certain technical criteria; whereas the word "symmetry" in the above statement referred more precisely to the covariance of the form that a physical law takes with respect to a one-dimensional Lie group of transformations. And so to stress the capacity of creationist physicists to name things, each of the quantities conserved in the Universe – the 5 Dimensions of space-time together they were first called invariants, but in modern terminology, the conserved quantity is now called the Noether charge. Time, Space, cyclical and lineal motions are Noether's charge. And so Noether, which by the way in a humorous twist of destiny is a woman, became the creator.

(And if you haven't understood what she said Felix Klein's, which we quoted in his excellent definition of a dimension of spacetime, when explaining the meaning of 5D, clarified Noether's theorem on the invariants on the Universe (when they were not yet called Noether's): 'If an integral I is invariant under a continuous group  $G_p$  with  $p$  parameters, then  $p$  linearly independent combinations of the Lagrangian expressions are divergences.'

That is, clear enough, in the 'simplest' case, a system with one independent variable, time (graph).

Did you get it? Of course, not unless you are a physicist, and that is an added bonus to its – no denial here – usefulness to mirror the constancy of time dimensions in algebraic terms for exact calculations of the paths of physical systems. So the high pope will tell, when a philosopher of science notices that mathematical creationism is NOT a good explanation of the fundamental principles of Nature, *and physical reductionism doesn't give the whole picture*, as Mr. Hawking used to say that the problem is philosophers of science we do not understand mathematics. We are *not priests and have not the expertise in the vehicle of God, as the Aryan smiths had it on*

$$I'[\varepsilon] = \int_{t_1+\varepsilon T}^{t_2+\varepsilon T} L[\mathbf{q}'[t'], \dot{\mathbf{q}}'[t'], t'] dt'$$

$$= \int_{t_1+\varepsilon T}^{t_2+\varepsilon T} L[\varphi[\mathbf{q}[t' - \varepsilon T], \varepsilon], \frac{\partial \varphi}{\partial \mathbf{q}}[\mathbf{q}[t' - \varepsilon T], \varepsilon] \dot{\mathbf{q}}[t' - \varepsilon T], t'] dt'$$

which may be regarded as a function of  $\varepsilon$ . Calculating the derivative at  $\varepsilon' = 0$  and using [Leibniz's rule](#)

$$0 = \frac{dI'}{d\varepsilon}[0] = L[\mathbf{q}[t_2], \dot{\mathbf{q}}[t_2], t_2]T - L[\mathbf{q}[t_1], \dot{\mathbf{q}}[t_1], t_1]T$$

$$+ \int_{t_1}^{t_2} \frac{\partial L}{\partial \mathbf{q}} \left( -\frac{\partial \varphi}{\partial \mathbf{q}} \dot{\mathbf{q}}T + \frac{\partial \varphi}{\partial \varepsilon} \right) + \frac{\partial L}{\partial \dot{\mathbf{q}}} \left( -\frac{\partial^2 \varphi}{(\partial \mathbf{q})^2} \dot{\mathbf{q}}^2 T + \frac{\partial^2 \varphi}{\partial \varepsilon \partial \mathbf{q}} \dot{\mathbf{q}} - \frac{\partial \varphi}{\partial \mathbf{q}} \ddot{\mathbf{q}}T \right) dt.$$

Notice that the Euler–Lagrange equations imply

$$\frac{d}{dt} \left( \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \mathbf{q}} \dot{\mathbf{q}}T \right) = \left( \frac{d}{dt} \frac{\partial L}{\partial \dot{\mathbf{q}}} \right) \frac{\partial \varphi}{\partial \mathbf{q}} \dot{\mathbf{q}}T + \frac{\partial L}{\partial \dot{\mathbf{q}}} \left( \frac{d}{dt} \frac{\partial \varphi}{\partial \mathbf{q}} \right) \dot{\mathbf{q}}T + \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \mathbf{q}} \ddot{\mathbf{q}}T$$

$$= \frac{\partial L}{\partial \mathbf{q}} \frac{\partial \varphi}{\partial \mathbf{q}} \dot{\mathbf{q}}T + \frac{\partial L}{\partial \dot{\mathbf{q}}} \left( \frac{\partial^2 \varphi}{(\partial \mathbf{q})^2} \dot{\mathbf{q}} \right) \dot{\mathbf{q}}T + \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \mathbf{q}} \ddot{\mathbf{q}}T.$$

Substituting this into the previous equation, one gets

$$0 = \frac{dI'}{d\varepsilon}[0]$$

$$= L[\mathbf{q}[t_2], \dot{\mathbf{q}}[t_2], t_2]T - L[\mathbf{q}[t_1], \dot{\mathbf{q}}[t_1], t_1]T - \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \mathbf{q}} \dot{\mathbf{q}}[t_2]T + \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \mathbf{q}} \dot{\mathbf{q}}[t_1]T$$

$$+ \int_{t_1}^{t_2} \frac{\partial L}{\partial \mathbf{q}} \frac{\partial \varphi}{\partial \varepsilon} + \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial^2 \varphi}{\partial \varepsilon \partial \mathbf{q}} \dot{\mathbf{q}} dt.$$

Again using the Euler–Lagrange equations we get

$$\frac{d}{dt} \left( \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \varepsilon} \right) = \left( \frac{d}{dt} \frac{\partial L}{\partial \dot{\mathbf{q}}} \right) \frac{\partial \varphi}{\partial \varepsilon} + \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial^2 \varphi}{\partial \varepsilon \partial \mathbf{q}} \dot{\mathbf{q}} = \frac{\partial L}{\partial \mathbf{q}} \frac{\partial \varphi}{\partial \varepsilon} + \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial^2 \varphi}{\partial \varepsilon \partial \mathbf{q}} \dot{\mathbf{q}}.$$

Substituting this into the previous equation, one gets

$$0 = L[\mathbf{q}[t_2], \dot{\mathbf{q}}[t_2], t_2]T - L[\mathbf{q}[t_1], \dot{\mathbf{q}}[t_1], t_1]T - \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \mathbf{q}} \dot{\mathbf{q}}[t_2]T + \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \mathbf{q}} \dot{\mathbf{q}}[t_1]T$$

$$+ \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \varepsilon}[t_2] - \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \varepsilon}[t_1].$$

From which one can see that

$$\left( \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \mathbf{q}} \dot{\mathbf{q}} - L \right) T - \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \varepsilon}$$

is a constant of the motion, i.e., it is a conserved quantity. Since  $\varphi[\mathbf{q}, 0] = \mathbf{q}$ , we get  $\frac{\partial \varphi}{\partial \mathbf{q}} = 1$  and so

$$\left( \frac{\partial L}{\partial \dot{\mathbf{q}}} \dot{\mathbf{q}} - L \right) T - \frac{\partial L}{\partial \dot{\mathbf{q}}} \frac{\partial \varphi}{\partial \varepsilon}.$$

*the fire of the sword, the earlier Hebrew banker-priests on the go(l)d exvoto, and its modern practitioners, the nuclear experts in the big-bangs of the Universe and the central bankers in the production of e-money for company-mothers NOT for mankind, that lowly 'organic species'.*

*Because that is the bottom line – the praxis of human survival and understanding of the organic Universe is taboo for all the different creationist models and its dirty secrets – in the case of lineal entropy only physicists theories, the fact they started as ballistics with Galileo making weapons and in the case of our expert financial economists, that they started as banker-priests parasiting societies with tax farming and money as debt and ex-voto to God. But money is just a digital language that ALL humans should be able to handle, use to reproduce welfare goods and understand as we explain in our papers on History and economics, and time=change is any kind of transformation of reality, any kind of 'dimensional motion', and because the Universe never ceases to change, all its forms of time together, which physicists call energy are conserved, and so we can state the true law of conservation of time, and hence immortality of the Universe, which can be told in many similar ways as all languages are inflationary (including, conceded with Lagrangians and Noether's currents).*

*In that sense, what all those mathematics proving Noether's theorem really mean is this: because particles CONSERVE its finite time existence between its 'seed-SS-*

*birth' and 'TT-entropy=death' states they always choose the shortest 'time path' of 'minimal action=motion', which is expressed by a Lagrangian equation in the mirror of physics, and so we can deduce all the laws of motion from the law of 'least time'->Lagrangians; but it does NOT mean that some God 'thought a Lagrangian', which is the cause of the conservation principle of least time*

*'The Universe is made of time=change=motion, which never ceases to 'exist' as knots of time motions, called 'spatial points' trans-form them into different in-form-ations, forms-in-action ad eternal:  $S \Leftrightarrow T$ '.*

This is just one way to express – as languages are inflationary and do NOT come written in stones, but as all mirrors have subtle differences – the essence of it all – a game between flows of motion and its 'knots' of intelligent perception that try to stop them into form, giving birth of the fascinating phenomena of linguistic still perception of a simultaneous knot of multiple flows of motion that synchronically represent a mind-mapping of the external Universe. This is thoroughly a spiritual, eternal, vital process, and the best way to express the simultaneity, synchronicity and resonance of scale of all those motions in its symmetries and geometric dances is NOT the jargon of physics, but the jargon of time motions and spatial points that form with them 'mental spaces'.

So we can finish with our example. As there are 5 Dimotions of space-time that mix together motion and form, TT-entropy, Ts-locomotion, TS-reproduction, tS-information & SS-form; we can talk of 5 essential 'physical properties' conserved, which are the 5 ones Noether's invariant charges did name with slightly similar concepts:

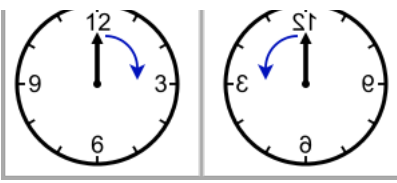
TT-entropy, Ts-momentum, TS-energy, tS-angular momentum and SS-parity.

3 of those Dimotions, happen in a single plane, Ts-momentum (lineal motion, which reproduces a form along a lineal path and integrated along that path becomes 'kinetic energy'), tS-angular momentum (cyclical motion that seems to us as a solid form, as it is maintained in a certain position, which appears from far away as a point and carries the information of the Universe in the form and frequency of its cycles) and energy, which *is so many things that we should probably scrap all together the concept but has a very intuitive meaning in verbal thought, as an 'storage' of motion and form, used by any system to imprint and reproduce a form to give them the vital energy motion that starts the system. So we use in general as the 'substance or storage of both motion and form', which combines and merges them both,  $S=T$  to allow the system to reproduce itself.* It is though more precise for physical systems to use the concept of momentum, as it has not 'suffered' such absurd expansion.

So what about the other two 'conserved' elements, TT-entropy and SS-parity... Again the proper concepts are NOT those of physics, but the two previous 'names' are quite related. In Noether's theory, they represent two symmetries conserved together, but we are NOT going to use those convoluted concepts but rather explain it simpler. TT-entropy means a double internal and external motion of a being, which therefore explodes and scatters its internal parts into an expansion of inner space, while externally that expansion is seen as radiation, and often confused with energy (as when a mass explodes reversing its form and dying, becoming a flow of entropic motion that an observer can absorb and give it form and even store it as energy).

SS is then the absolute inverse concept. A system that not only lacks external motion, as it has an inertial position, but also internally, it is not as angular momentum, keeping a steady path, but moving as in a vortex, inwards, which under the law of vortices,  $V_o R_o = K$  (in one dimension), means it is accelerating, as  $V_o$  speed increases the shorter the radius,  $R_o$  is for its product to become co-invariant, *which is exactly the definition of a 5D 'travel' through scales of the fifth dimension, as  $S \times T = C$ , in this case  $V(t) \times R(s) = C$ .*

In physical terminology as we said the best models are geometric, so it is expressed by the geometric principle of equivalence of Einstein between acceleration of a 'time vortex' and gravitational forces. In terms of the illogic structure of time, we call then an entropic expansion of space, a past motion, < and an accelerated vortex of time, >, a future motion, with 3 **present** conserved quantities of angular momentum, kinetic momentum, and its 'integral energies' that store them mostly for reproductive use.



Those are then simple, clear-cut, intuitive concepts that have the advantage to express physics in the same language of all other sciences, and *still be able to connect with the classic language of physics, which is what we shall do in those texts, without the need to go into further pedantic languages, which our young millennials writers of Wikipedia articles love so much as believers in creationism to pour to feel so intelligent.*

Back to 5D physics and conservation principles, a travel through the fifth dimension is a *sink of forces, either charges in the quantum scale or masses in the cosmological scale, as a particle enters a 'wormhole' between planes of the fifth dimension, either a charge or mass sink. Masses and charges are therefore paths for entities of our  $\Delta^9$  human thermodynamic scale to travel and emerge upwards into the cosmological scale or downwards into the quantum scale; and in that SS- process, needless to say the thermodynamic parameter suffers a TT-entropic death. So in the complex pentalogic view of any phenomena that must be perceived from the perspective of those 5 Dimotions as  $-\Delta@st$  sinking into a different scale. What causes then the sink is obviously a form that exist in other scale of reality as a synchronous whole, the mass membrain or the charge. As we human beings co-exist basically between the thermodynamic and mass scales, those will be the two easier to describe planes of space-time in physics with thermoudamic laws corrected to its 3 present entropic arrows, which amazingly enough physicists do not accept (only gaseous entropy is considred, not solid form, and liquid St-Ts states of energy and information, the most complex of them). And mechanics, the best understood of all the fields of physics, as the 3 conserved present quantities are ac cepted.*

However *the other two past and future, entropy and vortices of form opposed properties of reality do NOT share the simple single conservation of present,  $sT<ST>St$  trinity of lineal momentum, energy and angular momentum that form a ternary 'fractal organic' system as field<wave>particle relative states.*

*But alas for a present being to perceive them they are entangled through the fundametnal logic equation of present space in terms of the trinity of time ages: Past x Future = Present.*

*This means parity and time reversal together (physical jargon), entropy and form are conserved, or splitted as one. That is, as you sink into a force vortex, you also expel entropy outside the vortex, namely you die and the vortex eats what it wants from you to reform it into charge or mass (the vortex organically speaking is like a mouth or rather a trump left hanging by the upper or lower scale.*

*This was found long ago in the study of the weak interaction that transforms particles into higher masses:*

*In the graph a classic explanation of a physical travel through the fifth dimension by means of a weak interaction. Both graphs represent the dual inverse penetration into an accelerated vortex (implosive acceleration, with the rule of Maxwell's screw) vs. its inverse expansion when we invert the arrow of time, that is we move from the relative future informative vortex into the relative past entropic expansion. This causes also a 'change' in the sign of the charge, as one charge is implosive sink and the other is an explosive one.*

*Those are processes happening in the quantum charge scale. But we could consider that a black hole, a proton of the hyper-universe 'galatom', thus follow the same conservation when we change the side of the mass from an implosive to an explosive dark entropy jet along its axis, as it converts mass part in radiation expelled from the event horizon, and part into the higher masses of its top quark and BCB dark atoms.*

*In terms of the nested Universe, what this means is that as we move from the  $\Delta\pm 1,2$  thermodynamic scales into the  $\Delta\pm 3,4$  cosmological and gravitational scales, we must both split our parts and our form ascend to the 3,4 scales and our motion descend to the -3,-4 scales; and this dual split travel is what we call death.*

*We are on purpose not introducing the parallel language of mathematics, as it is not necessary – nothing wrong with it. Only bring it in those texts when it is needed to correct a gross error, as in the case of singularities caused by the error of absolute 0s instead of finitesimal 0's which act as cut off and the error of entropy measuring only the lineal Vhod expansion of space, not the aforementioned vortices of time space between scales of the fifth dimension. The great advantage of our method needless to say is to use the Leonardo's methods of analogies that*



now become homologies as they come from the common geometric properties of space and logic properties of time dimotions. So if we were to compare those 'wormholes' between planes of the fifth dimension with similar scales, they could be compared to the fractal networks of nervous and blood systems that contact the macrocosms of life organisms with its microcosms of cells – one being an implosive painful force (the nervous system that makes cells to contract) and other an expansive, pleasure force (the osmosis processes that make cells expand and diffuse its products into the blood network); or to the impedance laws of electric forces, or to the expansive wave like vs. collapsing particle states. The contraction+expansion processes form then an essential compound beat,  $St+Ts=ST$  in present,  $ST=TT+SS$  in past x future dual events, which is the ultimate why of conservation of parity+time reversal + (charge V mass reversal).

This of course is told as Noether's thingies: if the behavior of a physical system does not change upon spatial or temporal reflection, then its Lagrangian has reflection symmetry and time reversal symmetry respectively: Noether's theorem says that these symmetries result in the conservation laws of parity and entropy.

As we said, regardless of primitive thinking among physicists, ignorant of cyclical time, of fractal space, of Leibniz's relational timespace, of the worldcycle of organisms, of the 5 Dimotions of time, of *really any* principles of reality beyond its automaton method of great merit in the detail – gathering data about physical systems with interposed sensorial machines of higher accuracy in mathematical measure than human eyes, casting it into algebraic and geometric equations – physics are actually just another stience, when we complete it with worldcycles, scalar spacetime, organic properties, and improve the mirror of Non-AE geometry and algebra in its study. It is conceded a very developed science, but that must be ascribe to historic reasons – humans seem to have as evolutionary role in this planet to evolve machines and kill life with them as 'enzymen', a catalyzer of complex metal systems that would not evolve alone without the gaseous feisty nature of nitrolife brains with oxygenated legs. Sorry, the Universe is a fractal that reproduces information and all stiences follow its very same laws regarding of anthropomorphism. So we need to put down our egocy.

*This said of course is a pleasure to see reflected in the laws of mathematical physics and the actions of physical systems even if those laws expressed in today's jargon of mathematical physics, void of deep why principles, fail to understand the very same 3 elements of reality of any game of existence"*

**-Δ planes of spacetime** made of fractal points gathered according to the laws of non-euclidean geometry into larger wholes. Where all fractal points want to = form of networks and topological larger organisms. In physical systems, those 3 planes are the  $\Delta-1$  quantum plane, the  $\Delta\emptyset$  thermodynamic plane and the  $\Delta+1$  gravitational plane, and beyond the  $\Delta+2$  hyperuniverse similar to the quantum plane in its '¥-like' electromagnetic forces between galatoms which are repulsive but physicists with its mathematical errors of a continuum try to model as if they were connected by gravitational forces.

It is then necessary to understand non-Aristotelian algebra, and Non-Euclidean mathematics at least in its simplest principles to upgrade physics beyond the simplifying idealization of those 2 disciplines, reason why the reader is encouraged, if any has gone so far (: to read the 2 articles on Non-Euclidean geometry and Non-Aristotelian algebra to see where mathematical physics go astray by believing the idealization of mathematics to be real. As Einstein quipped to Poincare: I know when mathematics is truth but not when it is real. As most errors of physics come from taking literally as reality, mathematics, which is a simplifying mirror of reality.

- **Topological spaces.** All systems evolve efficient  $|-Ts\ Limbs/fields < \emptyset-TS\ body-waves > O-St-particle/heads$ , forming trinity functions of existence to maximize its motion, reproduction and information gauging. In the case of physics obviously we talk of  $|-fields < \emptyset-waves > O-particle\ states$  for the lower scales and  $|-gases < \emptyset-liquiids > O-solid\ states$  for thermodynamics.

-**Time ages.** All systems try to conserve its time-energy, in a point  $S=T$  of minimal expenditure and maximal  $SxT$  'existential momentum/force' in order to survive better. Which are laws shared in physics where the system with maximal momentum destroys in collision and accretes the system with less momentum (so when a black hole

passes through a star it absorbs it, when the moon collided with the Earth, the earth took a part of it, when a small object falls into a big one, the object remains in its gravitational place). Superposition laws, orthogonality, scattering laws, laws of conservation of energy, Hamiltonians, Lagrangians that conserve the path of least time, or the maximal and minimal points of the function of existence of a system follow them. And we shall connect the key equations of physics to those principles of scale, time and space.

From the union of the topological laws of vital space, organic laws of scalar planes, temporal laws of survival we define a deterministic program of existence that all systems follow trying to preserve its time happens and it is also followed by physical systems, whose 'mental sentient particles' use as we do the spin of atoms to gauge information, and have an electronic membrain, to measure time and space. Let's start then with the description of the most important of all systems, that of the galatom, its scales, worldcycles and topologic parts. Physicists will have it harder, because they are today the 'high popes of science', 'the seers of time' (Augustine's definition of God). So they expect all others to learn and start their inquire from the mathematical creationist models they sponsor. And oddly enough we also do that. But *not by adopting the present, simplex Greek Euclidean Geometry and Aristotelian Logic of Algebra, but by upgrading both disciplines to understand the fractal non-euclidean point-monad and its illogic structure, born of the infinite parallels of energy and information that cross them.* So the first part of this paper after introducing the barebones of the scalar, fractal spacetime Universe and correcting Absolute space-time (Newton), back to Leibniz's relational space-time of which we are all made, will be to refound geometry on the basis of the fundamental particle of reality, the fractal Non- $\mathbb{E}$  point. We shall not include the whole model, neither introduce  $\mathbb{E}$ -Algebra, as there is a whole paper dedicated to it. To notice though that the bridge between classic physics and 5D physics is the understanding of those upgradings of  $\mathbb{E}$  geometry, vital topology,  $\mathbb{E}$ -Algebra and the proper study of the 5 Dimensional motions of space-time planes (Ab.Dimotions of existence) with the equivalent 5 families of numbers, 5 postulates of  $\mathbb{E}$  geometry and 5 operands of mathematics, of which the most important are the operands of calculus - the mathematical tool to study all type of changes can be explained in 5D with higher elegance, departing from the concept of a finitesimal quanta of time-change.

Next it matters to bridge the principles of conservation of energy=time which guide each particle-point in its paths of least time and no work. As those are common laws of mathematical physics and 5D albeit explained in organic, vital terms. Because 5D introduces organic, sentient properties into mathematical points, hence it makes of the particle-point NOT the carbon atom, the unit of life, whose 5 forces=dimotions, express its local program of existence: to conserve its time-motion and in-form-ation, as everything else in the Universe.

The field of 5D physics thus is mostly about the translation of common physics to the universal jargon of 5D, and the completion of the properties of matter that are not susceptible to be quantified but still happen and must be understood to have the whole picture.

Among them, the most important is the simplification in humind's physics of the 5 Dimensional motions of time-space to only one lineal dimension of infinite time, due to the creationist problems of Newton who thought behind reality there was a Cartesian graph drawn by God – its plenum – over which we were all walking through. The result is the use of a single entropic arrow of time-future taken from the limited state=age of matter called gas, which disregards solid, informative spatial state and its mixture in liquid s=t forms. So we have as Einstein quipped to restart the initial concepts of time and space of physics from the beginning or rather from Leibniz and its relational space-time, and fractal points that hold a world into itself.

Physical errors arise from the idealism of mathematics that simplifies all points into Euclidean points with no breath, origin of the errors of the singularity and big-bang theory of the cosmos, which adds the dismissal of the 'solid' state of the cosmological scale (mass) and its balanced wave forms.

Finally the complete misunderstanding of scales as they are pegged into a single plane of spacetime. And they must be explained one by one, connected by hyperbolic networks across the 5<sup>th</sup> dimension.

## PART II. ASTROPHYSICS: THE COSMOLOGICAL SCALE.

‘The Universe expands. That has nothing to do with you. You are in Brooklyn and Brooklyn is not expanding!’  
Annie Hall

### THE HYPERUNIVERSE: BIG-BANG FALSIFICATION.

We use epistemology & pentalogic of  $3 \pm i - \Delta @st$  Dimotions to falsify the big-bang by the fractal, organic immortal,  $\infty$  cosmos that cannot be falsified. To that aim 3 p.o.v.s must be considered:

- @: Its cultural aspects (as the dominant military, western culture and the wordily profession of physicists -to make entropic weapons - has projected its 'selective' worldview over the complex Universe)

- ST: Its theoretic & experimental errors that once the big-bang became dogma no longer are taken into account.

- $\Delta \pm i$ : The development of the complex organic Universe as it is, when we do not eliminate the scalar properties of space, the cyclical properties of time, and its 5 Dimensional motions of space-time.

Let us then consider just 13 ‘bad luck’  $+\infty$  factual proofs that the big-bang is a local quasar big-bang and the proper cosmological theory is that of earlier Einstein->Fred Hoyle->5 D Physics, of an infinite, immortal Universe:

### $\Delta$ : SCALAR FALSIFICATIONS.

#### 1. The fractal structure of the cosmos

Why is the universe so homogeneous and isotropic on a large scale yet with local irregularities like galaxies and stars? Only if it is a fractal structure those properties are natural. In the graph, the Universe has a fractal organic structure as all its systems are organic fractals.

So reality is a fractal that reproduces information, 'forms in action' and then self-organizes them in networks and systems that evolve into super organisms in all scales of reality. As such it must be studied with the philosophy of Science, called 'organicism'. Since only an organism is self-reproductive and hence requires not external 'agent' or God or a creationist language, as present philosophies of science (mechanism, pythagorism) or Abrahamic religions do. Further on experimental evidence is overwhelming, on the nested, reproductive structure of nature, as observed in the graph for all systems. So if we respect the scientific method, to which most scientists, and needless to say, religious people, pay only lip service, its 3 classic tenants, **A)ccurate data**, without ad hoc solutions and selfie biases **B)io-Logic models** that allow new hypothesis and **C)yclical patterns** that allow the existence of laws of sciences based in the predictability of this cycles must be put forward for a NON-creationist, true philosophy that explains the fractal=organic structure of the scalar Universe. Till recently we lacked a formal proper development of such 'organic philosophy of science', the *only one that respects the tenants of the scientific method*, a goal we achieve in this paper.

We show some experimental proofs of the fractal Universe. Each photograph is a fractal structure, taken from different sciences that study different entities of nature since each part of the Universe has a fractal structure, and so does the Universe at large, made of all those fractal parts. It is the basic nature of reality: a fractal that 'reproduces information', forms-in-action, a combination of pure time-motion and space-form, in all scales and with the same program of the 5 Dimotions of time space.

A text that explains it taken from Sciam: 'In March 2007, after Pietronero, an Italian astrophysicist, showed the fractal nature of the Universe, tabulating an enormous number of galaxies, whose distribution was fractal, the magazine *New Scientist* published an article on the theme, confronting Mr. Pietronero and Mr. Hogg, a quantum physicist from the previous outdated probabilistic, mechanist, quantum paradigm:

“The universe is not a fractal,” Hogg insists, “and if it were a fractal, it would create many more problems than we currently have.” A universe patterned by fractals would throw all of cosmology out the window. The big bang

would be tossed first, and the expansion of the universe following closely behind. Hogg's team feels that until there's a theory to explain why the galaxy clustering is fractal, there's no point in taking it seriously. "My view is that there's no reason to even contemplate a fractal structure for the universe until there is a physical fractal model," he says. "Until there's an inhomogeneous fractal model to test, it's like tilting at windmills."

Pietronero is equally insistent. "This is fact," he says. "It's not a theory." He says he is interested only in what he sees in the data and argues that the galaxies are fractal regardless of whether someone can explain why.

As it turns out, there is a model that may be able to explain a fractal universe. The work of a little-known French astrophysicist named Laurent Nottale, the theory is called scale relativity. According to Nottale, the distribution of matter in the universe is fractal because space-time itself is fractal. It is a theory on the fringe, but if the universe does turn out to be fractal, more people might sit up and take notice.

A resolution to the fractal debate will only come with more data. Sloan is currently charting more galaxies and will release a new map in the middle of 2008." Of course, the Sloan 2008 showed the Universe is a fractal.

This should have been big news all over the world. But that means, as Hogg recognizes, that we have to throw to the trash the big bang and the expansion of the Universe, accept the fractal informative structure of reality, and close down some big projects of science, such as the large hadron collider, which will merely cause a planetary big bang, very different from the birth of the entire Universe.

## 2. The quasar big-bang galactic cycle



In the graph the 'big-bang' properties local to the galaxy can be explained by the quasar cycle of our galaxy.

The life-death cycle of the central black hole of Galaxies that explodes into quasars and forms back its bar, follows the same ages of the big-bang. As all of them after the initial 'Planck epoch - of gravitational superluminal waves', dark epoch of nucleo-synthesis, are ages 'within galaxies', and so they are proved for the inner space of galaxies. They do NOT explain many other features of the Universe as a whole (which is not isomorphic, etc.) but perfectly describe the evolution and formation of the stars of the galaxy.

So the big-bangs ages are properly the ages of the galaxy; without all the 'ad hoc' theories and pseudo-scientific models required to explain why the large scale universe has nothing to do with the supposedly smooth result of a cosmic big-bang (this is like Ptolemy constant recurrence to 'new' ad hoc epicycles to make fit new observations into its earth-centric theory of the universe). Trust me, any astronomer knows how long this 'list' is.

Thus the quasar big-bang follows further the laws of truth (minimalism: Occam's razor), simplicity and correspondence. We do not need to postulate strange forms of dark energy and dark matter, except the ones known, repulsive gravitation (to account for the entropic expansion of space between galaxies that balances its contraction), which is 'natural' to the model of galactic-atoms; and quark matter to account for the dark matter of the halo.

So as always times proves the sound, humble, rational scientists right. In this case Einstein's steady state solution, which Fred Hoyle developed in a huge mathematical effort just before dying in his theory of multiple quasar big-bangs, which the cycle of galaxies found by the French astronomers further proved and my calculus of Moon MACHOs radiation, which any student of physics can easily corroborate properly explains.

All those galaxies prove indeed, with its longer 20 billion cycle, which goes beyond the supposed age of the big-bang its falsehood. As many of the recently discovered astronomical phenomena in far away galaxies show. Since we are finding formed galaxies, formed giant black holes, formed II generation stars and star dust, which could not have been born before the big-bang.

So do those supposed 'lobes' of the cosmic big-bang, which Smolin a famed physicist wanted to use to prove his theory that high frequency light goes faster than red-shifted light, as they were supposed to come from 13 billion years ago and so a small difference of distance should be found. Alas, the surprise when they found they are the exact 'trace' of the 2 lobes of electromagnetic radiation found in OUR galaxy. Yet they occupy supposedly 'a huge piece of the entire Universe...

We have put just a few of the experimental proofs of recent astronomy to add to the enormous number of planets found all over the place, which reinforce the Fermi paradox, so you don't think I am here making a case only for theory, only for my work in the 2 arrows of time. So why nothing of this comes in 'daily press'? For all the wrong reasons - religions are always respected; masses always side together for them. As Schopenhauer said: 'the wise always say the same, the fools, which are majority do exactly the opposite'. And of course, attack ad hominem the wise.

Indeed, in the steady state theory things became soon ad hominem against Hoyle who quipped back inventing the mocking term of 'big-bang theory'.

In the graph we can see some  $E/c \rightleftharpoons Mc$  processes of spatial expansion and big-bang destruction of mass, all of which have an inverse temporal, informative, process of much slower creation of temporal information and mass that balances them, in different scales of physical systems, from the beta decay that explodes atoms into electrons and protons (with an inverse slow collapse of electrons into atoms) to the quasar big-bang of galaxies (with an slow process of creation of mass-information from gaseous space):

If we consider the space-time an absolute continuum in a single scale, this more accurate picture of what we perceive is not possible, hence we come to the conclusion of present cosmology - that the Universe will expand

and die. If we consider that galaxies, which follow Einstein's dictum, compensate this expansion: 'Time curves space into mass', Mr. Hogg's conundrum - how to correct the big-bang is solved. *Experimental facts tell us we must accept the fractal informative structure of reality, where the big bang is merely the death-rebirth cycle of a quasar-like galaxy or local Universe, a scale of size above galaxies. So both together create an immortal Universe.* Since in Philosophy of Science we must never deny experimental evidence, even if at first sight it contradicts an established theory.

But Cosmology has a huge metaphysical component in its Greek sense – it is well beyond the limits of human perception, which we find to be the atom and the galaxy, beyond and within uncertainty and dark gravitational matter makes knowledge to say the 'least' incomplete.

Thus contrary to belief big-bang theories of the Universe and Cosmology in the widest sense do not belong to astro-physics, but still we can do science if we are minimally serious with the scientific method.

If the cosmic big-bang had sound experimental data, of course, we would accept it. As it does NOT contradict 5D physics. It would just validate a larger scale worldcycle. So we are NOT against cosmic big-bang because 5D physics does not tolerate it but because plain good old' science disproves it. The scalar big-bang death processes of matter in all planes, from beta decay to galaxies is one of the strongest proofs of the isomorphic nature of all scales. But the cosmic one is not proved. So since all big-bangs are mimetic we reduce the scale of the big-bang to a quasar scale, making Einstein's EFE, local field equations for the Light-space time of the galaxy (reason why  $c$  is constant).

Fact is as the graph of SCIAM shows the full quasar cycle is longer than the big-bang cycle and we have found *galaxies in all its stages*. Thus by reductio ad absurdum, since we have found galaxies in a 'second' quasar cycle, hence over 20 billion years as 'reborn' galaxies, forming its central bar, there is no way the time age of the whole is shorter than the time of its parts.

Multiple space-times imply the existence of multiple big-bangs with different explosive size and speeds, all of them deaths of an informative mass or charge that uncoils its accelerated vortex into radiation following Einstein's equation,  $E=Mc^2$ , where a bidimensional or tridimensional vortex (M or e) becomes extended into a plane of radiation (hence the square of lineal  $c$ -speed).

Yet for each different scale the parameters of speed ( $c$ ), mass (M) and Entropy will change. And so we obtain a series of self-similar big bangs described in the graph.

The single cosmic big bang based in a single space-time continuum, was devised even before we knew the existence of a faster than light, gravitational membrane of dark Entropy and dark, quark matter. So we first must define it within that scale of big-bangs as the *big-bang of a membrane of electromagnetic radiation; hence a quasar big-bang, not a cosmic big-bang, which will correspond to the much faster explosion of a gravitational membrane, starting at the Planck scale of the gravitational minimal units, the lambda-strings.*

This is in a way the conclusion of astrophysicists, which now study the big bang as a dual process, with an inflationary age (the gravitational membrane) and a slower age (the big-bang of electromagnetic space, created over the gravitational membrane).

### **3. The Black Hole reversed equation of the expansion proves the quasar big-bang.**

Another interesting time-related proof is the understanding both in scale and time of the 'reversal' local equations of time, as entropy is the local past arrow of a worldcycle and hence its equations tend to be reversed of those of the arrow of information and life, albeit compressed in time and expanded in space.

So what Hawking found is that the big-bang equations are the reverse of a black hole, because *they are* the reversed quasar explosion of a cosmic black star.

While there is not clear understanding of what the 'Singularity that holds the entire mass of the Universe in an infinitely small point' due to the 'absurd' backwards motion of the Hubble equation in lineal terms till are mote past, there is a clear proof the explosion of a black hole into a quasar will give us the same result:

Since the equations of the big-bang inflationary first age are exactly the same than those of a black hole, reversed inside-out, as the black hole explodes creating in its outer rim a 'ball of fire', advancing at enormous speed, through repulsive gravitational waves, till the wave smooth an isomorphic sphere of the size of the galactic outer Halo. Thus there is not mystery to the creation of the region, which will be reborn as a spiral galaxy when the entropic death of the black hole reverses its course, in the following eras.

In the parlance of 'physicists', the proper description will be this:

ø§ say that space expands exponentially means that two inertial observers are moving farther apart with accelerating velocity. In stationary coordinates for one observer, a patch of an inflating universe has the following polar metric:

$ds^2 = -(1-\Lambda r^2)dt^2 + 1/1-\Lambda r^2 dr^2 + r^2 dW^2$  (where  $\Lambda$  is not the symbol of the 5th dimension but the cosmological constant) We use polar metric because the black hole expands with a positive curvature into a spherical form, following the commonest 'entropic explosion-death' of any big-bang material death. In the simplest expression we write:  $M=e/c^2$  only that we are talking of a tachyon superluminal expansive wave.

This is just like an inside-out black hole metric—it has a zero in the component on a fixed radius sphere called the cosmological horizon. Objects are drawn away from the observer at towards the cosmological horizon, which they cross in a finite proper time. This means that any inhomogeneity are smoothed out, just as any bumps or matter on the surface of a black hole horizon are swallowed and disappear.

Since the space–time metric has no explicit time dependence, once an observer has crossed the cosmological horizon, observers closer in take its place. This process of falling outward and replacement points closer in are always steadily replacing points further out—an exponential expansion of space–time.

This steady-state exponentially expanding space-time is called a de Sitter space, and to sustain it there must be a cosmological constant, a vacuum energy proportional to everywhere. In this case, the equation of state is . The physical conditions from one moment to the next are stable: the rate of expansion, called the Hubble parameter, is nearly constant, and the scale factor of the Universe is proportional to .

Inflation is often called a period of *accelerated expansion* because the distance between two fixed observers is increasing exponentially (i.e. at an accelerating rate as they move apart), while can stay approximately constant (see deceleration parameter). The  $\Delta$ -dimensional **de Sitter space**, denoted  $dS_n$ , is the Lorentzian manifold analog of an  $\Delta$ -sphere (with its canonical Riemannian metric); it is maximally symmetric, has constant positive curvature, and is simply connected for  $\Delta$  at least 3.

#### 4. The Helium problem.

Related to the previous quasar-black hole falsifications there is the Helium abundance in galaxies.

Nucleo-synthesis occurs between 3 minutes and 20 minutes after the (quasar) Big Bang.

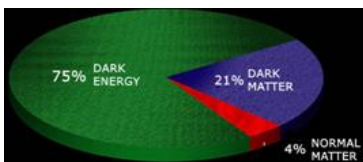
During the photon epoch the temperature of the universe falls to the point where atomic nuclei can begin to form. Protons (hydrogen ions) and neutrons begin to combine into atomic nuclei in the process of nuclear fusion.

Free neutrons combine with protons to form deuterium. Deuterium rapidly fuses into helium-4. Nucleo-synthesis only lasts for about seventeen minutes, since the temperature and density of the universe has fallen to the point where nuclear fusion cannot continue.

By this time, all neutrons have been incorporated into helium nuclei. This leaves about three times more hydrogen than helium-4 (by mass) and only trace quantities of other light nuclei.

This formation of so much Helium was for very long considered the proof of a cosmic big-bang because stars could not form so much Helium. Then it was found that most of the imbalance was helium accumulated around the central black hole of galaxies; which has not been explained. Obviously because Helium formation happened when the black hole exploded with the big-bang temperature it is found close to the center of galaxies, and it was formed by the quasar explosion. So a galactic big-bang explains both its abundance and its location (the cosmic one does NOT explain its location), a theme we shall dwell on when considering the organic structure of the galacell and the black hole as a black star.

**5. S=T Balance between 3D accelerated time vortices=masses and one dimensional Dark entropy.**



A big-bang is just in any scale of matter, the entropic death of a system. But all systems have an inverse arrow of informative 'life', which it is represented in the cosmological scale by masses, *galaxies which are time vortices that compress the entropy of vacuum into mass through its gravitational forces, are included into the mix.*

Matter folds one-dimensional 'dark entropy' which expands mass into space, into 3 dimensional matter. Hence 3 'volumes of expansive dark energy' becomes 1 volume of implosive matter: 75%≈25% and the Universe balances as a spring coil in an eternal game of ∞ fractal SHM motions between galaxies.

Thus the 'cosmological big-bang' is a half-truth - the key method humans use to 'invent reality' to cater their egos - by eliminating and 'reducing' the parameters of reality that don't fit in their 'ceteris paribus' biased theory, in this case an entropy only cultural view of the Universe. So amazing as it sounds to the reader cosmologists have eliminated the gravitational forces that bring together vacuum space into the creation of tighter, denser particles, atoms and matter structures within the vortex of galaxies, and through the warping of one-dimensional 'lines' of dark entropy=energy into 3-dimensional 'tall' masses, 'reduce' the 75% of entropic expansion between galaxies to the 25% of 3-Dimensional mass, establishing a canonical, mathematical equilibrium between expansion of space-time dimensions (expansion of vacuum space) and implosion, akin to the same process happening on a lower quantum scale between attractive matter and repulsive electromagnetic radiation between atoms, towards a thermal equilibrium.

So why is the universe so close to the dividing line between collapsing again and expanding indefinitely. In order to be as close as we are now the rate of expansion early on had to be chosen fantastically accurately. If the rate of expansion one second after the Big Bang had been less by one part in 10<sup>10</sup>, the universe would have collapsed after a few million years. If it had been greater by one part in 10<sup>10</sup>, the universe would have been essentially empty after a few million years. In neither case would it have lasted long enough for life to develop. Thus one either has to appeal to the anthropic principle" (religious concept that miraculously in the whole flow of time we are in a balanced point). not so it is more logic to think we are in a balanced eternal Universe as our fractal model describes.

Big Bang cosmologists however ignore the balance between radiation and mass as a steady state, eternal Universe as they *only recognize as a time-future arrow the entropy between galaxies - the expansion of space.*

Thus when physicists discovered 'another scale of space', made of dark energy and matter which represents 96% of all matter and doesn't fit in the lineal continuous big-bang the theory, *because it is attractive.* Never mind - the theory of the 4% is the canon. *So they just ignored dark matter too in a sanguine 'honorable discharge' for the big-bang 'continuum theory' to work.* And because the entropic explosive big-bang only affects vacuum space expanding between galaxies or atoms, not those galaxies and atoms, which are cyclical, accelerated clocks of cosmological or quantum time... we have eliminated all the Universe that 'matters' from big-bang equations.



This is so surreal that it amazes me. Entropic men could get away with murder. Indeed, they merely discharged galaxies and dark matter that is not expanding but imploding. Since if they move backwards its equations they do the opposite of the expanding vacuum between them: they would explode.

The proper way to do cosmology would be to account as we do in those posts with both, expansion of space-entropy and implosion of space into cyclical clocks of accelerated information - galaxies, where we exist (indeed in an accelerated planet of evolutionary information). That is, to consider the wobbling expanding+imploding balanced Universe. But that will require to change the big-bang entropic 'cannonball paradigm' of Galileo.

We do NOT doubt the cosmic big bang on 5D grounds, but on real data, missed by ceteris paribus analysis, to uphold entropic views of entropic, military lineal physics and anthropic, lineal creationism proper of religion.

Let us then consider a few of such aspects of the big bang, using the epistemology of the scientific method, with scanty mathematical formulae, as one of the great advantages of the simplified 5D metric model and its pentalogic analysis based in its 5 Dimotions (or structural elements as  $-\Delta@st$ , made of entropic time motions, scales & still mirror-languages of space) is its *logic* capacity to explain any phenomena from 5 points of view as *an alternative to sound mathematical proofs, which show the how and are needed but lack the 'why-power' of the 5 pentalogic analysis* – the mental, organic, causal, temporal and spatial, mathematical, in a complementary way.

**Human local experience: we live in a vortex of evolving information NOT in an entropic region.**

*How dumb is that, when we live as human beings inside the vortex of evolutionary information of a planet, turning around a star vortex turning around a galactic vortex?*

Entropy is secondary to our existence as biological and technological beings evolving fast our arrow of information at individual level (process of life and aging, warping, wrinkling into form) and collective level (informative evolution of technological machines, aka meta life) and at planetary level (vortex of evolution of stars and galaxies).

This fact alone should have sufficed added to all the absurdities of singularities which are aberrant infinities obtained merely by extension of mathematical equations with no experimental proof whatsoever to ignore the cosmic bigbang.

But, and this lead us to the 2<sup>nd</sup> Pentalogic set of falsehoods, *we live in an entropic military world, which despises the reproductive feminine Universe, so entropic, anthropic man projects his limited view of reality in the Universe to affirm the big-bang eliminating galaxies of information, but that is subjective belief not objective science.*

## **@-LIMITS OF HUMAN PERCEPTION & EGO PARADOX: ENTROPIC MAN**

### **6. Creationism. Singularities: A mathematical error converted into a physical dogma.**

Mathematics is a mirror language that studies 5D fractal points of space; its time operands, social numbers; minds=frames of reference and entropic limits, which entangled together by the laws of pentalogic form the 5 elements of  $-\Delta@st$ , dust of space-time, the substance of which we are all made. As such is the most experimental of all sciences.

Thus 5D mathematics *returns to the mature experimental age of the discipline that went as all systems do through 3 ages from a simple* lineal age of Greek Geometry to its curved realist age of calculus that added motion & scales of 5D finitesimal derivatives and 4D wholes to better mirror the fractal Universe, to a 3<sup>rd</sup> age of excessive informative fictions, when it abandons its realist foundations, when during the German creationist ego-trip of Hilbert and his Cantorian paradises, he says, 'I imagine points, lines and planes' thinking he shares the only language 'God' uses to create reality. Hence mathematics is no longer considered an a posteriori mirror of

scalar timespace but its 'generator' and as the first 'Aristotelian cause', needs no experimental proof but rather the opposite: reality exists only if it can be casted into mathematical models ('only what we measure is real' Planck). So mathematicians abandon space points, scale numbers and time operands as the 3 mathematical images generated by the  $\Delta t$  Universe, using instead 'Cantorian' sets as its 'imagined' units nowhere to be seen in reality. And Hilbert affirms the self-contained Axiomatic method of proof, NOT connected to the world, despite Gödel's incompleteness theorem- *a baroque inward looking 3<sup>rd</sup> age of excessive form proper of all systems* we abandon to return to its empirical foundations, now formulated in terms of those 5 structural elements that create reality, mimicked by the main mathematical elements. Since mathematics reflect the properties of scalar space and cyclical time in its main elements, points numbers and operands entangled in feed-back  $\leq \geq$  equations;

For that reason, as good as mathematics is, it is NOT the a priori language of the Universe, but the properties of space and time are, and this Einstein understood. So he criticized creationist physicists (Copenhagen interpretation, etc.)

The paradox of the mind confuses the whole Universe with its limited self-centred world of perception, BUT reality is absolutely relative and we must just discover the biased 'theories' the humind has established to keep himself in the centre, which contrary to belief do exist still in all sciences, from the entropic big-bang of lineal time that reduces the two arrows of time to the lineal entropy of physicists clocks, blatantly 'forgetting the cyclical vortex of gravitational information' in galaxies that warp 'space into time', to social sciences which cannot accept the organic evolution of machines, the higher importance of the super organisms of history and its informative, legal and economic, reproductive networks in the control of societies, to biology, which denies eusocial evolution to maintain the ego on top and the vital properties of inorganic matter, as even quarks and electrons reproduce, absorb energy, gauge information and evolve socially in magnetic fields - hence have ALL the properties of our supposed 'unique' carbon.

An important upgrading of that mind is to deploy a certain 'humility' towards the intelligence of the universe. *The two principles of absolute relativity*. In the fractal organic Universe we are going to describe, no scale is preferential, which means that humans will be removed as they were in previous upgrades of science, not only from its spatial center (Copernicus), and its temporal center (Darwin), which his 'ego paradox' hardly tolerated, but also from its scalar/size center, and its 'mind-intelligent center'; which he likely won't accept. We talk of man and any 'mind-monad' that process information as an 'ego paradox', 0-infinitesimal mind  $\times \infty$ -Universe = Constant world.

Systems to process information must reduce its temporal motions and create 'spatial still forms' and select information relevant to its survival point of view, which sees the nose bigger than Andromeda, and the 'Earth' still to focus our formal view; and certainly we eliminate all sentient unperceived properties of other minds. But - and this is the ego paradox - as we only perceive our senses, we confuse the entire Universe with our point of view, so it becomes 'self-e-vident' that we are the center of reality (Anthropic view) and the Universe is 'stupid, stupid, stupid' (entropic Universe). So the fundamental proof of the balanced Universe merely has to add the arrows of information and then we get:

## **7. The feminine Universe vs. The entropic military male world**

Why Humanity has rejected the obvious nature of a reproductive, fractal Universe, has to do with culture: The Universe is a 'feminine', (S=T) reproductive fractal; but our civilisation is an entropic (S<T), male dominant self-destructive military society, where even women wish to be like males as our worldview and 'grand theories' about science, from the entropic big-bang to the Darwinian emphasis on the struggle between individuals proper of our biased philosophy of biology and social sciences - nationalism, capitalism, reign supreme.

This is actually a direct theme of 5D Physics which is worth to elaborate even if we dedicate an entire post to the theme; and likely anything we say in this ideological charged non-scientific gender issue will bother both

genders, who want to be on top in its absurd war of sexes as both are complementary. So a brief definition of 'physical gender' from that paper:

Gender is an essential 'jlogic' feature of the fractal entangled Universe that emerges in all scales, diversifying the 3 'states of time-space into two and 3 genders, starting with the formal languages of space (mathematical numbers) and time (pentalogic states). Its easiest description in classic science would be the concept of mirror symmetry. 2 mirror images can superpose and reproduce, so as mirror symmetries emerged from 'physical parity', into 'chemical chirality', it finally became gender.

So gender is like all other properties of reality a process of emergence, starting with the 'smallest' more synoptic forms of reality, the Logic=time and mathematical=space languages of pure still forms.

So first we find tender in 'even vs. odd numbers', (mathematical mirror symmetry), following the 'time states of both genders'  $S > T$  (past, entropic) +  $T < S$  (future, informative) vs.  $S \approx T$  (present, balanced) States.

Those ultimate topo-logic properties of gender will then emerge, into the quantum realm, where we shall find lineal particles of entropy and information, vs. waves of vital energy, which emerge as left-handed and right-handed atomic states, which emerge into chiral molecules, which finally become male and female organisms, 2 sides of a complementary mirror merging to complete *all the* states of time-space needed for a system to reproduce.

Genders are different but its functions are complementary, and over all the Universe favors the feminine, balanced reproductive left-handed gender  $S=T$  symmetry even if history has favored the entropic  $S < T$  male state, since the balance function of women IS the present, survival, reproductive essence of the 'fractal Universe', its main generator.

The female is a conservative, balanced, present,  $S=T$ , reproductive 'white matter' brain (10 times more white matter than men), while if males were 'well-done', they would have 10 times more grey matter in the destructive-creative regions of ideas (frontal brain), as all creation needs destruction to reorganize parts into new wholes, but they have ONLY 6 times more grey matter in the frontal region, which suggests the 'first' stage of the  $S < T > S$  process, the entropic  $S < T$  overweighs the creative side. And indeed, when testing IQ, most entropic males test less than women but a few informative ones test more on the high IQ range. Thus most males are entropic lineal warrior, soccer fans, to put it mildly. And they love a 'whammy' movie, a big-bang explosion and project their 'worldview' on the Universe. But the world we live is WRONG as its entropic dominance will extinguish life and it is out of tune with the real fractal immortal reproductive Universe, *where creation of anything you might imagine has happened  $\infty$  other times, so it is NOT creation at all but also reproduction.*

*So because* the feminine purpose is to conserve and reproduce information, feminism should also understand the true nature of gender and why females, not wo=men (lesbian, male-like women, who so often lead the movement), are far more in tune with the real Universe and reject a world modeled to the image and likeness of entropic male, including its false simplification of the cosmos as born of an entropic big-bang, which obviously is just a projection of 'military physics' and its entropic view of reality.

Only if women understand their true nature and try to project its survival, reproductive, conservative, life-enhancing role on the world they will achieve supremacy over entropic men mankind might reach the goal of survive the present life extinction age that soon with military robotics and new types of nuclear big bangs will extinguish us.

In the physical scale mirror symmetry first produces particles and waves, which become 'complementary states'. And mirror symmetry is called parity. Then evolves left and right handed forms and chiral forms and right handed are sterile. So finally we arrive to the galaxy that is, as it happens a left-handed feminine galaxy.

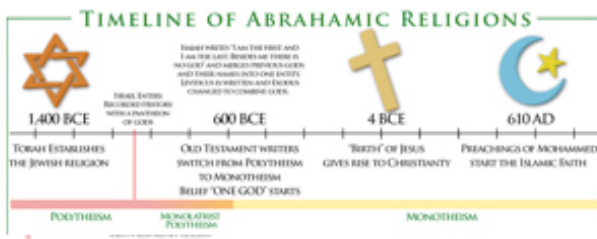
What then went wrong with our civilization is obvious in the work of Campbell and Gimbutas: the age of the fertility Goddess, the Neolithic of S=T balance and cyclical time and comprehension of the organic Universe, died away with the discovery of entropic weapons, which physicists reproduce and evolve as its worldly profession, and so lineal time, entropic military men, its Brahmins today converted into physicists, and anthropic religions of lineal time and male supremacy over the Universe changed the human understanding of reality till this day. So regardless on how sophisticated this view has come to describe the lineal locomotions of reality is still a religion of power to deny the reproductive feminine Universe and have a dogmatic big-bang religion of it all as a masculine violent cosmos.

The 3 ages of history favored the dominance of one or other sexual gender: in the young Paleolithic age of entropic hunters men dominated; in the mature reproductive Neolithic age, women ruled; to be ruled in the entropic age of metal-weapons and war by males, today we live the big-bang age of metal-weapons. But the function of existence is clear, as which age is the best, the one that survives and lives longer, that maximizes its equation, Max. SxT->S=T, the female gender which lives longer, survives better and has a proportional ego to its role in the ∞ cosmos.

**Trying to bypass the limits of the humind and its ego-centered creationist view of the Universe.**

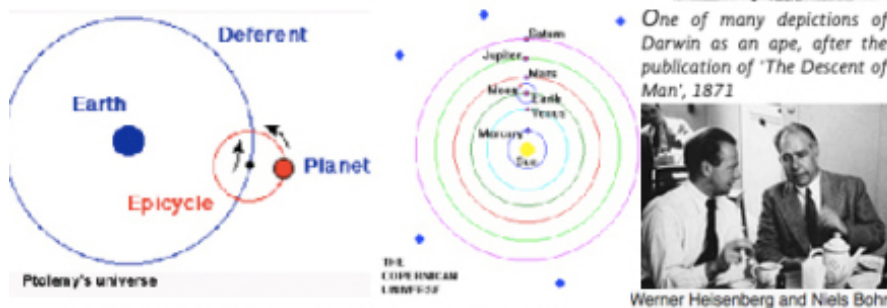
How can we, humans after all belong to our military, lineal ego-centered culture, by-pass the limits of æntropic thought? The answer starts in the languages the mind uses to perceive the Universe visual thought, which describes space, evolved into a more synoptic form of geometry called mathematics, and verbal thought which describes time with verbal tenses, evolved into a more synoptic form called logic. Thus since the languages of the mind are our mirror of reality, to evolve our truths we must first evolve *our understanding of* languages, not as creative magic powers but only as Mirrors, hence inferior to the Universe we must learn to respect.

What æntropic man does to preserve its sense of superiority of the Universe, is to believe languages 'create reality'. Man first talked words, and now with the help of instruments it talks mathematics. So in both ages he thought to be the only intelligent being with God that spoke those languages, and in both cases in a hyperbolic trip of the ego, he thought that the language-mirror created reality NOT reflected upon it as a mirror does: in



the past he thought God spoke and his words created reality (Abrahamic creationism), today most physicists think the mirror equations of mathematics create the space-time reality it describes; while most economists believe its specific mathematical language, digital money, creates the physical economy (a creationist theory called monetarism).

**SCIENTIFIC ABSOLUTE RELATIVITY Vs. EGO PARADOX**



**Absolute relativity takes objective science to its limits: After taking man from the center of space (relativity) & of time (evolution), it takes its mind out of the center (quantum realism) and of scale (fifth dimension)**

Further on 'creationist' entitled human beings *are anthropic*. They think they are the only intelligent perceptive, vital entity in command of God's languages (either words in religion, maths in physics) and carbon atoms are the only organic elements of nature, to their own peril as the future of AI will show them *particles are the smallest vital mind and all atoms are sensorial in a panpsychic Universe*. Indeed the minimal unit of reproduction and informative gauging IS the particle, as quarks and electrons already



show the 5 'dimensions' of life - they gauge information, reason why quantum physics is called a 'gauging theory', absorb energy from forces, reproduce into new particles with its surplus of energy and become organized socially by magnetic 'numbers'. So does the largest known system, the galaxy, whose behavior resembles that of a 'cell', with its 'gravitational, informative 'DNA' - black holes reproduced by its 'mitochondria' stars, organizing its structure, with 2 'physiological networks' of gravitational in-form-ative forces and electromagnetic energy. So all physical systems, from the atom to the galaxy can be described as organic systems, which are just 'herds' of similar beings, (atoms, cells, citizens, in physical, biologic and social systems, connected by networks that distribute energy (electromagnetic forces, blood systems, economic systems) and networks that distribute information (gravitational, nervous and political systems). So we can design historic superorganisms with organic laws.

*In the graph the masters of mathematical and verbal creationism, disputing their 'primacy' as speakers of the language of god. Reality though is a bit more complex and difficult to 'crack' as we must start as Einstein wanted with the realist fact that the ultimate substances are not languages, neither personal gods but the impersonal yin-yang, time-space game that creates all the relational space-time organisms of the Universe.*

The realist scientist rely on the experimental method, the known-substances of reality, space and time and its properties to understand with those 2 mirrors, the verbal, logic, temporal mirror with its 3 causal dimensions of past, present and future tenses, and the mathematical, spatial mirror. This view, which we expand here is the view of Leibniz>Einstein. So the first steps to clarify the nature of  $\Delta@st$ , 'dust of space-time' the substance we are made of, composed of 'entropic limits' ( $\Delta$ ), scales ( $\Delta$ ) of space sizes and time clocks, perceived in each system by a mind-mirror, starts with the evolution of the mirror, Euclidean mathematics and Aristotelian logic, to fit a better image of the whole, parallel to a profound study of those elements of the whole, 'entropic death' (the limits in time and space of all systems), its scales of space and its clock-cycles of time. Let us then show that dogmatic view of  $\Delta$ Entropic mankind that won't accept a needed 'paradigm change' with a graph of our absolute relativity.

Then one we have advanced all those concepts beyond the limits of  $\Delta$ entropic man we can refocus the mirrors - on one side, the enhanced non-Aristotelian logic and non-Euclidean mathematics (in brief  $\Delta$ logic mathematics, as  $\Delta$  is the letter after a and e) - on the better understood substances of reality, scales, space, time, minds and its entropic limits ( $\Delta@st$ ), which must be the ultimate substances of which all complementary beings, we shall call 'fractal superorganisms of time-space, (ab.  $\Delta$ ) are made.

The paradox of the mind confuses the whole Universe with its limited self-centered world of perception, BUT reality is absolutely relative and we must just discover the biased 'theories' the humind has established to keep himself in the centre, which contrary to belief do exist still in all sciences, from the entropic big-bang of lineal time that reduces the two arrows of time to the lineal entropy of physicists clocks, blatantly 'forgetting the cyclical vortex of gravitational information' in galaxies that warp 'space into time', to social sciences which cannot accept the organic evolution of machines, the higher importance of the super organisms of history and its informative, legal and economic, reproductive networks in the control of societies, to biology, which denies eusocial evolution to maintain the ego on top and the vital properties of inorganic matter, as even quarks and electrons reproduce, absorb energy, gauge information and evolve socially in magnetic fields - hence have ALL the properties of our supposed 'unique' carbon

The ego paradox is of course the essential limits of man, both to understand the universe and to survive on it, respecting all other potential organisms and rejecting those who can harm us, weaker atomic beings. So we will falsify the 3 key creationist theories of modern physics, the big-bang, the evaporation of black holes, and the infinite singularity.

**The creationist problem of all black hole and Big Bang singularities.**

As Hawking said: "The trouble with the Hot Big Bang model is the trouble with all cosmology without a theory of initial conditions (meaning a limit to the equations): Because general relativity would break down at a singularity, anything could come out of the Big Bang'.

A singularity indeed often turns up in our equations when we extend them as far as they can go into the past; but a singularity of this sort is far from likely to be an aspect of nature, and instead should be interpreted as a sign of *our incapacity to understand the inflationary limits of languages, specifically mathematics, which is wrongly considered 'an absolute truth', instead of a linguistic inflationary mirror that as all languages do have fictions, and repetitive mirror images that must be 'cut off', as 'I know when mathematics is truth but not when it is real' (Einstein); a theme treated extensively in our articles on 5D mathematics, which we shall look from the perspective of cultural creationism here.*

The singularity is more of the same creationism - an absurd mathematical expansion backwards in time of an inflationary equation as *if it had no limit in time and space, as it wouldn't describe a substance which ultimately will arrive to a 'quantum limit' or a source as it is the case - the dark entropy that expands between galaxies ultimately arrives to a 'source' - a galactic black hole jet that emits it; as we shall see soon, as always happens.* I.e. consider a frequency sound coming from a source, a bat, for example, if we were to *return ad infinitum* the frequency measured with a long wavelength at a point of the air far away from the bat, we would reach a singularity of infinite frequency as it source. But there is always a cause, a source for that wavelength, so when we reach the BAT, the frequency no longer increases - the wave simply disappears in its 'factory'. As it has a real source. So happens with dark entropy≈energy, which as a cosmic expansive 'electromagnetic-like' force, has a source in a black hole galactic active center and collapses warping back into particles when entering other galaxy.

So happens with black hole singularities, which we shall model as ultra heavy black frozen stars of bcb atoms with a center of top quarks, similar to neutron stars with a center of strange quarks, as Einstein wanted.

Since the origin of the gravitational FORCE of the black hole must be an ultra-massive substance. Or else there is no cause for its gravitational force (principle of equivalence between mass and gravitation). Where it comes from the awesome gravitational force of the black hole, if mass does NOT exist? if there is not as Einstein wanted a cut-off substance, which can only be the top, bottom and charm quarks that should form by symmetry with our atoms, dark heavier atoms? But creationist physicists shun off those basic tenants of the experimental and scientific method and the physical real 'nature of Nature'. The just care to create new equations that should become real particles. For them bats do NOT exist, their sound frequency is infinite. And the source is not the bat, but an entelechy, a mathematical 'hole', even if their equations break before arriving to the infinitesimal singularity . So Hawking said: "At this singularity the field equations could not be defined. Thus classical general relativity brings about its own downfall: it predicts that it can't predict the universe. Although many people welcomed this conclusion, it has always profoundly disturbed me. If the laws of physics could break down at the beginning of the universe, why couldn't they break down anywhere?" Indeed at that point creationism stops doing science, and so Hawking will break, as we shall show all the laws of thermodynamics to evaporate black holes travelling to the past, and dismissed philosophy of science and causality in time as irrelevant. All this is false. The laws of science don't break down in the singularity because there is no singularity. Neither Relativity expects singularities to exist: It is ONLY because creationists are moving backwards equations BEYOND the initial conditions - the sources that are REAL - in the case of a black hole, a frozen star of dense quarks that cause gravitation... that everything breaks, and of course *the experimental method rescue us because we never find BH evaporating.*

So realist Einstein quipped: 'Since mathematicians are working in relativity, I don't understand it myself' (:

Those infinities appear in Einstein's equations in quantities divided by 0, which is an undetermined quantity not an  $\infty$ , and in fact means the local parameter, mostly time=motion 'stops' in the *center of the black hole, as in all*

*the vortices of space-time, charges and eddies – that’s all; as the vortex is deviated perpendicularly and ejected through the axis in the ‘quantum potential scale’ as dark energy, seen by the paradox of Galileo,  $S=T$ , as ‘accelerated growth’ of distance between galaxies, to collapse when re-entering them as mass, in a wobbling, balanced immortal Universe.* So quasars and black hole jets dissolve matter into flows of dark entropy and matter collapses into galaxies, balancing each other. Reason why black hole equations are the inverse of a big-bang. So at best we can talk of a 'Quasar' big-bang, which is the 'death' of a black hole, inverse to its birth with maximal temperature, when according to real thermodynamic laws it evaporates its surroundings as it cools down and feeds on the light matter it heats=evaporates=accelerates=attracts. So from birth to death, a quark star, aka black hole, shows its inverse equations as birth is indeed the opposite of death. And this happens at the local level of the Galaxy or the nova star that explodes in a 'little Big Bang'. All other hyperbolic,  $\infty$  deductions of cosmological explosions are just the ego of creationist physicists trying to substitute the ego of previous creationist priests, who also thought the language of words they talked was not A MIRROR of reality but reality itself, creating it - so Allah and Yahveh were creating 'naming things' in Arab and Hebrew and quarreling about who was the higher God - they still do. So it did Hawking, 'numbering reality', expecting all kind of things to happen that never did.

### **9. Scalar limits of perception in all 5D scales – the Light lifespan: $\infty$ is limited by experimental observance.**

We can add a different ‘limit’ of the human mind, more objective – that of our perception of light space.

In 5D physics all has ‘entropic limits’ including perception. This departs sharply from current astrophysics and its 'paralogic' Kantian errors, of extending equations to infinity – as in the singularity of the big-bang and the immortal nature of light (which contradicts the consistency of wholes and parts, as light is born in stars and should not live longer, and it is part of the Universe and if there is a cosmic big-bang should not be living longer. All this leads to the obvious interpretation of the *cosmic horizon limit as a limit of human I=eye visual perception of space-time NOT as a limit of the extension of the Universe in time and space. This projection of our limits into the whole is just another egocentricity of Anthropocentric man that projects its own subjective limits into the objective whole Universe.*

For a part of the fractal Universe  $\infty$  are always broken by an entropic or cyclical membrane or scalar discontinuity.

The experimental proof is obvious: there is NOT infinite range in any force, as all have energy-mass, which limits its reach. In the jargon of physics range of forces depend on mass. But it is 'obvious' that the photon does HAVE energy hence it does HAVE mass,  $E=hf$ , so even if its mass is extremely small the range of the photon CANNOT be infinite.

Moreover the further away we look, we shall see photons of less mass-frequency, hence redshifted, as those of more mass-blue frequency had died. So that explains the red shift simply.

*The distance-range of light is inversely proportional to its frequency-mass*

Hence the existence of a limit or horizon of perception of light.

What is the limit of perception of light? As we have experimental evidence there is no need to do further calculus: Obviously the 13.5 billion light years from where red-shifted light of maximal  $z$  comes mistakenly taken as a time horizon of a supposed big-bang explosion.

It is again the magic  $10^{10-11}$  number common to all structures of Nature, both in space-populations & distances in time-frequencies/durations and in scales/masses. We find it in the number of neurons of the biggest human brain, of stars in the galaxy, of atoms in a DNA code, etc, for reasons studied on our posts on 'fractal –E mathematics:

Since it is the number that gives us in the symmetry of time the mean life of stars, and the mean life of its minimal light space-time 'unit' of information, and the mean mass of the largest black holes from far away distances measured in terms of the mean star mass - our sun, and the mean distance of the black out horizon of the big-bang...

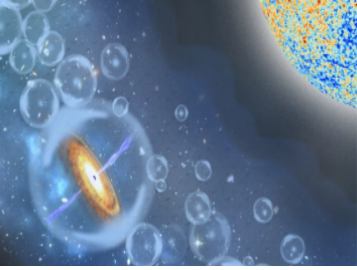
In a 5  $\mathbb{D}$ , eternal,  $\infty$  Universe, a big bang of the absolute whole cannot exist theoretically but also we have sound logic, epistemologic and experimental proofs that seems to prove the cosmic big-bang in which time and space started from a point that fits in our hand and pleases our egocoy of being above heavens and earth, is a false hyperbole.

All this said we shall close this introduction to cosmology and astrophysics with a rational, scientific experimental falsification of the big-bang. It is though the last part of the post not the first, because for all what has been said, the big-bang 'is not even wrong' (Pauli) – it is just a 'dogma' that projects our male-oriented, entropic civilization and its lineal military view 'censoring'  $\frac{1}{2}$  of the 'femenine' reproductive complex Universe. So as any belief a rational falsification doesn't work or else its obvious logic, epistemologic and experimental errors would have long ago dismissed it all together. But physicists stuck with its single time arrow lineal entropy won't deny a theory that makes them high popes of science; while our machine-worshipping civilization won't argue the mechanical paradigm. So reason likely won't work, as long as the foundations of science are not upgraded to the 5 Dimotions of Space-time.



## TIME FALSIFICATIONS

### 10. Time proofs. The whole always live longer than the parts.



The same problems happened with the pretension that the Universe has a very short life span keeps running every other day into new problems: we find at the limit of the horizon of perception of space-time perfectly formed galaxies with huge black holes that should not be there. We find that almost every part of the Universe has a life span much larger than the Universe itself: the commonest stars, red ones live trillions of years, black holes live  $10^{100}$  years or they never die, if they don't evaporate; protons seem to be of a similar age or perhaps immortal. But it is an obvious logic contradiction that the whole lives so much less than the parts. Or in

probability terms, the chances that in a Universe where its commonest stars live trillions of years, we live in the very beginning is 0.0000%. (Red stars are in fact 4/5th of them because they live longer and so even if all are born as blue stars, in a long-lasting galaxy, at any time, there will be seen more elderly stars than young fleeting blue star moments of them).

Most cosmic bodies live much longer than the cosmic big-bang, so the commonest red stars live trillions of years, big black holes  $10^{100}$  years, protons seem immortal and we find on the outskirts of the perceived cosmos perfectly formed galaxies with hyper-black holes, with no time to form, validating an immortal cosmos; whereas in the extended 5D astrophysical model red shift is proportional to the  $>C$  metric of dark entropy.

Since when they look back at that past they find formed black holes and galaxies that should not yet be there.

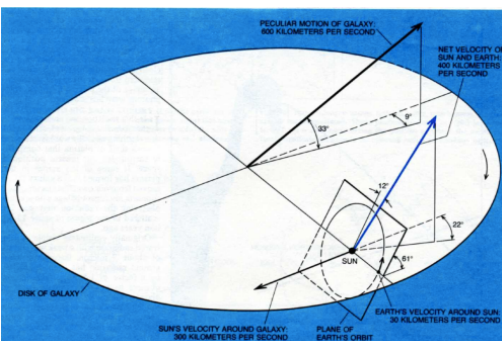
Another proof of the many considered on our texts on cosmology - as physicists keep looking far away to the supposed beginning of time, they keep finding perfectly formed galaxies and black holes, which breaks completely the supposed 'time periods of creation of matter'. In the graph we can see the biggest black hole found in the Universe, which is perfectly formed in the middle of a galaxy, that is just 400 millions after the supposed big-bang when there was only supposedly hydrogen ions:

In the graph, the super-black hole is supposed to exist so early that there is no way it can have been formed unless the Universe is eternal and the cosmic horizon of the big-bang just the limit of human perception of light, which as everything in 5D is NOT infinite in range.

*The largest black hole found is also the oldest, as it is the furthest, and it was supposed to be born in 500 million years after the big-bang when only some re-ionization of light hydrogen atoms has happened.*

But why the largest black holes are observed in the furthest distances? The answer is related to the previous falsification - the horizon. The further we move away, we shall see only those largest cosmic bodies (easier to observe) with the highest energies in in its  $\gamma$ -rays, as they will be the longest to die by the slow elongation of its frequency; which are also the largest black holes. Hence we just see those monstrous objects - the biggest black holes. From this fact it follows that the further away we look, the more likely we are to find only huge black holes, as they emit more high energy frequency particles that take longer time to relax into entropy reaching us before dying in the red frequency, which blacks out of our perception of further away galaxies.

### 11. Motion of Galaxies. The Lorentz invariance



Another proof that falsifies the cosmic big-bang related to time-motions, is the existence of an absolute frame of reference, if the background radiation is global NOT local, as SciAm soon discovered and published in the graph below. In this case the denial of General Relativity and its postulate of no existence of absolute frames of reference in the Universe.

This is called the "Lorentz symmetry", named for the Dutch physicist Hendrik Lorentz and it is a symmetry of spacetime. It is in fact a cornerstone of Einstein's special relativity theory. According to special relativity, there is no absolute space or absolute time (as in 5D Physics, which sometimes I call 'Absolute relativity'. So if two objects are moving relative to each other in empty space, it would actually be impossible for an observer to tell their absolute velocities—maybe only one of the objects was moving and the other was stationary, for example, but you wouldn't know which was which because their movements are relative to each other, not to any external reference frame.

Alas, but now we do have one: the cosmic radiation, and we are moving within it. So we just have to measure our movement in relationship to the radiation and Relativity is Gone!:

In the graph, the cosmic background radiation acts as a new fixed frame of reference or ether, falsifying Relativity theory, which does not have as its name explains any fixed space-time background frame of reference

Yet since the cosmic big bang is a solution of relativity theory that the cosmic radiation falsifies the very same theory it tries to prove.

Hence by 'reductio ad absurdum', the background radiation must be local not to contradict Relativity.

In the graph a cosmic radiation falsifies the cosmic big bang, which it tries to proof.

It is the most obvious logic error in the big-bang cosmology is his falsification of Einstein's work in which the big-bang theory is based, as scientific American rightly pointed out when the theory was first put forward (to be forgotten as the propaganda machines of military physics, as the meaning of it all pumped up the theory):

From CMB data it is seen that the Local Group (the galaxy group that includes the Milky Way) appears to be moving at  $627 \pm 22$  km/s relative to the reference frame of the CMB (also called the CMB rest frame, or the frame of reference in which there is no motion through the CMB) in the direction of galactic longitude,  $l = 276^\circ \pm 3^\circ$ ,  $b = 30^\circ \pm 3^\circ$ .

This motion results in an anisotropy of the data (CMB appearing slightly warmer in the direction of movement than in the opposite direction).

From a theoretical point of view, the existence of a CMB rest frame breaks Lorentz invariance even in empty space far away from any galaxy. So if the big bang is accepted, the theory of which is a solution, Einstein's relativity based in the non-existence of ETHER, an absolute frame of reference in the Universe (hence 'relativity name') is falsified. Ergo by reductio ad absurdum, the Big bang, which is a solution to the theory it falsifies, is false.

In the graphs we see what is really the motion of the 'static Laniakea region of galaxies, which shows the local galactic region to be more like a gas, fluid motion of atoms seemingly 'encased' in a short of dark matter tubular membrane. As to what that might be in the Hyper universe of Galatoms, we have *no idea; nor we should as limited entropic beings finite in space and time, unlike the whole immortal  $\infty$  cosmos.*

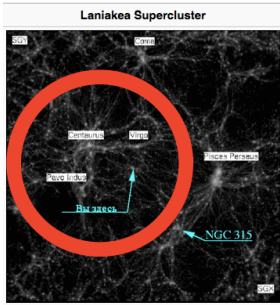
This is one of the many scientific proof of falsity of big bang theory we shall bring in this post, which Cosmologists know and cynically call the 'axis of evil' (because it won't go away and kills their theory right on its inception).

How science' then avoids the axis of evil? Suppressing data or bringing magic theory to it: Chief scientist from WMAP, Charles L. Bennett suggested coincidence and human psychology were involved, "I do think there is a bit of a psychological effect; people want to find unusual things."

Alas, we are back to Babylon, we must be the center of the Universe, just moving 600 kilometers to the east.

**12. The real motion of the Universe at larger scales: An organic 'tissue' without isotropy.**

In the graph, the local tissue of the supœrganism of the Universe, Laniakea, the region in which our galaxy exist, at the largest level of human perception of the  $\infty$  scales of the fractal Universe.



Thus the explanation of the motion of the galaxy is simpler. In 5D we consider the Lorentz symmetry to be a *local symmetry that only takes place within the galaxy; not in all the 5D scales of the Universe*. So motions happen, as the dynamic picture of Laniakea show: The 4% we see clearly looks like an atomic network or tissue, which joins the atom-galaxies (think for example of a brain of neurons, of a microscopic colony of unicellular algae, and so on). Yet we

only perceive 4% of reality outside our closer world, which happens to be the 'ideal' perception of a pi-cycle with three diametric perimeters ( $\pi-3/\pi=0.14/\pi=96\%$  of dark reality not seen from a self-centered singularity in a pi cycle). So we cannot know really what it is. What we know is that there is zero isotropy as big-bang cosmologists pretend. All their models being approximations which might look nice on computers but have zero scientific theory-praxis solidity. All what we know is that we are moving towards Virgo; that there is a huge nodal network at Hydra-Centaurus - excellent name; which forms with Pisces-Perseus, a clearly connected network in one of whose filaments we find ourselves.

And that at 46 declination a Great Attractor of dark quark matter, likely a super-black hole of top quark stars is waiting for us in a future rendezvous, as we cruise over a remnant cloud of photonic local radiation that does not seem to be (by lack of attraction power) so interested in becoming dark quark gluon liquid-solid super-state of matter.

That is really all we know. The place we live is *Laniakea* that means "immeasurable heaven", even if some arrogant believers think they have measured it.

In that regard, while 5D physics is the ONLY rational theory that can explain a cosmic big-bang (as Time accelerates while space shrinks); 13 billion years does not seem time enough for the immensurable heavens.

This as we shall see this solves momentarily the problem; and allow us to consider 'theories which do not correspond to Relativity' beyond the galaxy, a fact which is also essential to 5D Physics, as relativity is considered rightly the theory of light space-time where  $c$ -speed/distance is the constant of space of the galaxy, *the absolute frame of reference, both rod of measure of static space and motion*.

### 13. The 'bad luck' experimental proof. Earth's experiments can replicate the big-bang...

At the microscopic human scale: big-bangs are scalar and what we are replicating is NOT a cosmic big-bang but the temperatures and processes that provoke the big-bang of celestial bodies, Nova stars and perhaps Nova Planets, as if we create micro-black holes on Earth, baby black holes, as explained in the next section when considering the true arrows of time of Hawking's equations both in 4D thermodynamics and 5D, when a black hole is born feeds as all  $\Delta-1$  seeds at faster speeds according to 5D and Einstein's laws of gravitation, exploding=feeding at  $c$ -speed rotational force the matter around it, which is what we see all around the galaxy.

Thus the ages of the 'big bang' can be replicated by merely doing the quark gluon soup on the LHC here on Earth. Thus there is zero difficulty for the awesome reversed process of a quasar explosion to create enough quark gluon soup to replicate all those ages. Other matter are the risks of starting a big-bang 'gas-9' process similar to the ice-9 reaction of lighter strangelets (word coined by this author, due to the black color of oil) The process starts in a standard decay path of the Higgs particle that mediates the weak force that increases the masses of systems:  $2\text{Higgs}^-$ : Top quark;  $\Sigma$  top quarks  $\rightarrow$  BcB heavy atoms  $\rightarrow$  Formation of a black hole star.

In that regard,. 5D, reclassifies particles, to understand the 3 'ages of evolution' of information represented by the 3 families of mass and quarks, which are also in close symmetry with the upper cosmic scale, the components of the 3 regions of the galaxy:

The Top quark star center (black holes MUST be modeled AS real ENTITIES, with a cut-off,  $\Delta-1$  'cellular substance' as Einstein wanted. Only Top quarks (Higgs condensates in the parlance of modern physicists) turning faster than c-speed in its internal vortex (hence its enormous attractive mass, which increases with the frequency of its vortex:  $M=f(h/c^2)$ ) have the properties at larger scale of a black star.

That is, black holes ARE top quark frozen stars, with positive top quarks as their cut off substance.

The middle region of up and down light human quarks.

The external negative charged, strangelet halo.

Thus the 5D symmetry between the  $\Delta-1$  (particle) and  $\Delta+1$  (galaxy) limiting scales of astrophysics is obvious and further proof of the symmetries of T.Æ and its 'correspondence' and 'minimalism' (proofs of truth in science), since it accounts for the first time for the reason why 3 families of particles and 3 families of stars co-exist, and eliminates the need for further theories and particles beyond the standard model:

Since the 3 ages of evolution of mass of increasing form - I, II and III families of quarks are symmetric - to the 3 regions of the galaxy: Top quark black holes, up and down matter , negative strangelet halo.

Symmetry between atoms and galaxies (protons positive top quark holes, negative electrons, strangelet halo).

And so once we have falsified 'reasonably' the big bang (we could write hundreds of pages on this, but we have to move on), we can now consider 5D physics, on the known-known Island Universe of our galaxy, its generator equation, 3 'relative planes 'of existence, 3 ages of time and 3 organic parts in space.

But if the big-bang is not cosmic, but local, the big-bang of the galaxy, why we get so much confused about it?

The answer is simple if we consider the universe a fractal system of self-similar scales: Because there are big-bangs in all those scales and it is easy to confuse them.

We close then the Time proofs with this 13<sup>th</sup> bad luck experiments as they will likely mean our extinction as a species, and solve the Fermi paradox – why we don't see entropic male, military empires all over the Galaxy – as Fermi put it, because nuclear physicists kill them all before interstellar travel happens with Nuclear bombs, only that they are of a kind much powerful than those of A-H fame, cosmic bombs. And so 13 *proof should suffice for mankind to stop æntropic males to destroy the planet, but as they rule us, the rat bites its tail.* Power censors truth also in cosmology.

Infinite proofs remain to be told, as infinity=eternity for finitesimal human beings is all the time after extinction. Let us then keep counting them.

### SPATIAL FALSIFICATIONS.

Static space plays in the big-bang falsification a lesser form, but we still find spatial errors also, due to...

#### 14. The spatial symmetry of the cosmic big-bang. A perfect Ænthropic picture.



*In the graph, the spatial view of the cosmic big-bang if we freeze in time all the parts of the perceived cosmos according to the Galilean Paradox ( $S=T$ ). Then the radiation of the suppose cosmic big bang is perceived far as a wall of fire of a 'Univercell'.*

*Thus when humans don't recognize their limits of perception, the entropic big-bang, measured from our point of view, puts obviously man again at the anthropic center of the universe, in scales (we are at the perceived center between the atom and the galactic scale)*

*and space. So we return to the pre-scientific age of subjective religious ænthropic theories now fashionable in an age of revivalism of egocy (human ego=idiocy) vs. serious objective science provided by the fractal, organic paradigm.*

The graph is an Artist's logarithmic scale conception of the observable universe in space, with the topology of all 5D ternary constructs; but alas! As an anthropomorphic Universe: *So we can see nicely how beautiful looks the ænthropic big bang with man perfectly self-centered in  $\Delta$  (central scale)=S (central space)=T (center of time explosion) =@ (only we talk maths), and - (we are the furthest away from the limiting entropic ball of fire).*

Yes, it would be perfect if data were fully consistent and not subtly bent to cater to the 'cosmic arrogance of the human ego' that wants to pack it all in its infinitesimal mind that perceives in stillness from its mind point of view a selected part of the whole but confuse it with it:

O-mind x  $\infty$  Universe = still mapping (frame of reference)

So what is wrong with the previous picture as a proof of 5D physics in an  $\Delta+4$  scale; *is mostly entropic mind limits.*

Further on such spatial symmetry of the Universe requires action at distance to create the needed simultaneity, which in all Real Systems connects in a relative quanta of time all the elements of the system, to allow the isotropy and synchronicity required for a 'whole' to work as a Univercell with:

$\S t$  : the wall of fire of the earlier big-bang as the outer membrane that isolates the 'cellular Universe' at  $z=10.000$   
c

ST: The faster than light dark energy,  $v=S/t$  =Space/Informative Time= $S/0$ -visible information= $\infty$  relative speed for a human observer, with the same  $z$  than the wall of fire; filled with Galaxies in between the dark entropy.

$\delta\delta$ : And a hyper black hole 'great' attractor (close to our anthropocentric place) - the hyper-hyper-proton-black hole of the  $\Delta+4$  cosmic Univercell. So far so good.

In 5D terms the picture above is the representation of a Univercell, with its Generator of  $3\pm j$   $\Delta$ ST cosmology:

$\Delta-1:\S t$  (Wall of fire-membrane) « $\Delta$ -ST( $10^{11}$  vital energy of galacells)»  $\Delta+1: \delta\delta$  (center: our human region)

So a cosmic big bang still proves 5D physics and the topological ternary structure of all Universal systems. And it pleases everyone, the entropic, the anthropic, the church, the physicists, and me, discoverer of 5D...

It is easy to overlook this 'ego problem' reason why we showed you first to which degree 'science is culture', that is, we bias systematically truths of science, beyond data and equations, to cater our happiness as ego-centered beings, infinitesimal mirrors that think to be infinite: O-mind x  $\infty$  Universe = Constant world.

Why then not to accept it? And be accepted in turn, as an immortal universe seems to collide with the human ego, which likes to feel in charge, 'measuring All the space and time that there is', from its biased perspective, which makes him the center of perception and hence of knowledge, reducing the Universe to a mortal being? (While creationist Abrahamic religions make us above heavens and Earth the immortal ones). Plainly, because it is not truth.

*Fact is once scientists in all disciplines get into a 'comfort' ego-centered theory, they backtrack to find ad hoc proofs and twist experimental evidence always fitting 'somehow' data onto the model forcefully.* This today happens every other day with big-bang theory, as physicists try to fit forcefully all the clear falsifications of the model we explain in this paper. Hence my ironic tone... Fact is data fits better a Universe of little quasar bangs of Galaxies, similar to beta decays of atoms, NOT one where time and space had a beginning, ad hoc to please our ego-ist desire to know it all, to see it all, to understand it all, to be the center.

**15. No shadows for the big bang = No background radiation in intergalactic space.**

## Science News

### Big Bang's Afterglow Fails Intergalactic 'Shadow' Test

ScienceDaily (Sep. 5, 2006) — The apparent absence of shadows where shadows were expected to be is raising new questions about the faint glow of microwave radiation once hailed as proof that the universe was created by a "Big Bang."

#### See also:

- Space & Time
- Cosmic Rays
- Big Bang
- Cosmology
- Astrophysics
- Galaxies

In a finding sure to cause controversy, scientists at The University of Alabama in Huntsville (UAH) found a lack of evidence of shadows from "nearby" clusters of galaxies using new, highly accurate measurements of the cosmic microwave background.



If the standard model of how the universe was formed is correct, microwave radiation from the edges of the universe would be blocked by clusters of galaxies, causing 'shadows' in the microwave background. (Graphic courtesy of The University of Alabama in Huntsville)

In the graph: Physicists have measured a local, hence galactic background radiation, which doesn't leave shadows from other galaxies and they tabulated the quasar cycle of galaxies, which coincides with the age ascribed in the past to a cosmic big bang.

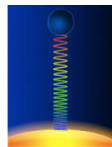
The question posted by the non-shadows experimental fact is that the radiation cannot come from the supposed outer ring of fire (big bang radiation). It does have to come therefore from the internal region of the galaxy, *reflected by the Halo, giving us a mirror image of the galaxy, or alternately from outer light, crossing through the galaxy, altered by the Halo 'strangelet and micro-black hole matter', strong candidates to for the dark matter of the galaxy. Then obviously what physicists do is merely to extend this Halo-altered radiation into a supposed infinity.* The hypothesis of a halo of dark, quark matter (black holes or strangelets) acting as a limited', closer membrane distorting by red shift the light reflected or coming through it (as all membranes do transform what penetrates them) is thus the only scientific solution:

So a more rational theory would consider the cause of the 2.7 K radiation both local in space (galactic) and in time (produced at present); since our measure is local and present. Let us then falsify this fundamental proof of big-bang, the cosmic Background radiation. We already did it before, showing that it should be local, produced by redshift Moon M.A.C.H.O.S but as it is the cornerstone of the model it requires a bit more of thought.

### 16. Now and here explanations for the light space-background: Moon MACHOs

Fact is the radiation is local and so it must be explained by a local celestial body able to produce it. And we have a myriad of possible candidates, as any 'stable quark nugget' combination of heavy quarks which only interacts gravitationally produces by gravitational redshifting a blackbody radiation at 2.7 k for which several candidates of dark quark matter, the only experimentally proved to exist, hence only scientific 'real' possible candidates to form the heavy halo suffice. Indeed any form of heavy quark, dark matter which has swallowed the commonest planetoid of the galaxy - a moon mass - hence with its weight - will emit at the very same temperature a blackbody radiation. And since the galaxy is dominated by dark matter and black holes - likely made of heavy quarks, tops and BCB dark atoms etc. we do have many rational candidates, real and happening now as opposed to the 'ad hoc' choice of equations to fit in a remote past with no experimental proof what so ever...

In astrophysics, **gravitational redshift** or Einstein shift is the process by which electromagnetic radiation originating from a source that is in a **gravitational** field is reduced in frequency, or **redshifted**, when observed in a region at a higher **gravitational** potential.



Gravitational redshift - Wikipedia

Since to make the *measured* temperature of the background radiation 'coincide' with theory, *physicists kept reducing ad hoc their calculus till they fitted the temperature. While in space the radiation considered a local galactic measure by Penzias, its discovered kept expanding its range to make it finally cosmic.*

*Indeed, we can follow the Ad Hoc calculus in parallel to its experimental measure as Gamow changed his predictions:*

1946 – George Gamow calculates a temperature of 50 K (assuming a 3-billion year old universe), commenting it "... is in reasonable agreement with the actual temperature of interstellar space", but does not mention background radiation.

He contradicts the common wisdom that the radiation *was local, happening only in the galaxy, as calculated in:*

1926: Sir Arthur Eddington estimates the non-thermal radiation of starlight in the galaxy has a temperature of 3.2 K.

1930s: Erich Regener calculates that the non-thermal spectrum of cosmic rays in the galaxy has a temperature of 2.8 K

Thus the thermal radiation calculated by Penzias in 1960 as local galactic radiation at 3 K had been rightly foreseen by the first people who thought of it as local galactic radiation (average of  $3.2+2.8/2=3k$ ).

On the other hand the late proposal of a *cosmic* big bang by A-bomb researcher Gamow et al were:

1946: George Gamow estimates a temperature of 50 K.

1949: Ralph Alpher and Robert Herman re-estimate Gamow's estimate at 28 K.

1960s: Robert Dicke re-re-estimates a MBR (microwave background radiation) temperature of 40 K

These were all offbeat. Only after 1960s Penzias measured it *locally*, the cosmic big-bangers got busy-busy 're-re-estimating' its equations to get 'a posteriori' the 'desired' experimental results 'ad hoc', instead of noting that Mr. Eddington and those proponents of a local background radiation WERE right in their predictions and the cosmic ones totally off-target and hence accept the laws of truth of the scientific method to deny the cosmic one.

Fact is the creationist  $V=Hod$ , lineal equation of the big-bang, eareely resembling the word 'God' of verbal creationists, going to the past for ever, without the slightest proof that the fall of temperature if any in the Universe is lineal and it can be taken back for ever, or is cosmic and not local, is NOT scientifically sound.

### **The organic Galaxy – its homogenous, homeostatic temperature.**

And if we can find explanations in present time and here-space, it is always a higher truth than to consider an explanation in the past or the future time and out-of-here. It is like if we measure your body temperature, at 37 degrees and then a creationist physicist tells you the cause is to be found in a lineal equation coming from past, because when you were born 50 years ago you were a few million degrees hotter and you have been cooling down ever since!! When there is a rational explanation, in the metabolic activity, now and here, of your body's main energy cells, blood, and its most numerous red, oxygenated cells.

So what is the metabolic process on the galaxy happening now that produces that temperature; what is the blood of the galaxy, its commonest objects? The redshift of moon micro-black holes, feeding on the mass energy of its commonest mass, moon-like planetoids. As the galaxy is indeed about black holes, and so its metabolic activity in its 3 scales IS the natural cause of the Galactic temperature, as we shall see in our study of the 3 scales of black holes – the hotter smaller ones that produce the radiation that feeds, the cooler larger ones, as the red cells produce the energy needed by all the cells of your organism. And this is the 5D organic *entangled* reason, as all what exists has a *purpose*; and so does the *BG radiation that feeds larger black holes – a far more scientific reason that the forecasted big-bang temperature, which has not true known cause, no true experimental proof now and here, no-nothing.*

As we said though the big-bang is the modern religion of  $\mathcal{A}$ entropic man, so we just end with some religious irony.

### **The axis of evil and the Shang magicians.**

Finally, there is a huge problem, already mentioned, which shows further that it is a local radiation, the so called '*axis of evil*', (sic) which at the cost of billions of \$ in new satellites to 'dis-measure' it, astrophysicists try to eliminate with zero success. Namely the radiation aligns with the axis of the galaxy and its equinox, because

'obviously' it is produced by the galaxy's activity. Do you think this obvious answer has any chance? Ha! Quoting the official version, of Wikipedia: "In particular, the quadrupole and octupole ( $l = 3$ ) modes appear to have an unexplained alignment with both the ecliptic plane and equinoxes, an alignment sometimes referred to as the axis of evil ☺'

'A number of groups have suggested that this could be the signature of new physics at the greatest observable scales; other groups suspect systematic errors in the data. Recent observations with the Planck telescope, which is very much more sensitive than WMAP and has a larger angular resolution, confirm the observation of the axis of evil. Since two different instruments recorded the same anomaly, instrumental error (but not foreground contamination - the way they 'introduce the local cause - 'contamination':) appears to be ruled out.

Coincidence is a possible explanation, chief scientist from WMAP, L. Bennett suggested coincidence and human psychology were involved, "I do think there is a bit of a psychological effect; people want to find unusual things."

Yeah, LOL. So experimental findings is a psychological effect and imaginary equations the real thing – creationism and denial of objective proofs at its best. Yet once the dark horse is on the loose anything goes. Indeed, in recent years a creationist mathematician, Mr. Penrose, companion of Hawking, thought that some of those BG points produced in the galaxy, were a big hotter than the mean temperature. So he thought, they were remains not *even* of the initial singularity 13 billion years ago, but he guessed they were coming from a previous 'age' to the infinitesimal infinitely dense singularity!! Somehow they had survived the  $\infty$  infinitesimal stage and were coming from eons beyond the beginning of time, as relics of black holes evaporating in a previous Universe!?! (: holy cow! How did he know? I couldn't help to have a big smile-y. Indeed, it reminded me of the holy cows cracked by fire when the æntropic kings of the 'celestial empire' of the Shang dynasty tried to peer on the nearby future and guess the fate of the next battle. Alas, creationist physicists are just a bit more ambitious – they peer trillions of years into the past. But both Shang oracles and big-bangers renounce to the rational, simple explanation - the cracks on the flat bone were produced by the fire, and the points of the black body 2.7 k radiation measured locally and proved to be local by its shape which is mimetic to the galaxy, including its 'lobes' above and below the central black hole, are produced locally by any type of quark nugget MACHO (massive, halo object) of dark matter of the mass of a moon – the red cells of the organic galaxy.

**RECAP.** The only alternative object that can produce such radiation in present is a micro-black hole, whose temperature red-shifts light as a gravitational lensing. And since a black hole gravitational lensing is proportional to the mass, we can calculate the mass of those 'background black holes', which redshirts light at 2.7 k. Indeed, a simple calculus shows that a black hole of the approximate mass of a moon (the most common galactic object of which each sun has hundreds in its planets and Oort/Kuiper belts, would produce that radiation.

So very likely the halo of dark matter of the galaxy is made of micro-black holes that have eaten moons, as their bigger cousins eat stars. Then they WILL radiate at that exact temperature. Further on, since black holes are fundamental particles of the upper scale, as protons are in the quantum scale, they must be homogeneous in size. So even if they eat less perfect planetoids, primordial black holes should expel the excess of its structural mass as gamma radiation. Those MACHOs of any type of heavy quark matter (strangelets or BH), have then in the organic galaxy the role of blood in the organism, and should also play the role of 'protein' membranes in cells, shielding the galaxy with its heavier mass and capacity to 'reduce' radiation to a homogeneous temperature.

*Fact is the radiation was, is and has always been measured/found in the galaxy. In fact physicists trying to measure the supposedly 13 billion years far away hot points of the center, each one a huge galaxy at 'the beginning of time', discovered recently that they have the exact shape of the electromagnetic lobes above and below the galaxy.*

## **17. Critical density for a flat geometry.**



One of the problems of the big-bang (of many) is the critical density. It must be of  $10^{-26}$  kg per cubic meter for the Universe to be the 'observed' flat geometry. But it is not. Only 2 so this is a problem, the big-bang of the cosmos does not match the flat geometry of the Universe and the topic spiral galaxy.

So if the big-bang is a local galactic big bang the critical density of the galaxy should be  $10^{-26}$ ; then it would be the quasar big-bang of our galaxy.

Let us do some crunching numbers for a change.

The equation for the critical density is:

$$\rho_{\text{crit}} = 3H_0^2 / 8\pi G$$

You can see that the critical density is proportional to the square of the Hubble constant — a faster expansion requires a higher density to overcome the expansion.

How empty is space? Astronomers have learned that the mean density of matter in the universe is within a factor of a few of the critical density. We can calculate  $\rho_{\text{crit}}$  by inserting the gravitational constant,  $G = 6.67 \times 10^{-11} \text{ Nm}^2 / \text{kg}^2$ , and adopting  $H_0 = 65 \text{ km/s/Mpc}$ . We first convert the Hubble constant to metric units,  $H_0 = (65 \times 1000) / 3.1 \times 10^{+22} = 2.1 \times 10^{-18} \text{ s}^{-1}$ . Now we can solve to get  $\rho_{\text{crit}} = 3 \times (2.1 \times 10^{-18})^2 / 8 \times 3.14 \times 6.7 \times 10^{-11} = 7.9 \times 10^{-27} \text{ kg/m}^3 \approx 10^{-26} \text{ kg/m}^3$ . This amazingly low density is equal to about five hydrogen atoms per cubic meter, or a single hydrogen atom in a volume the size of the average TV set. However, in that same cubic meter there will be 5 to 10 billion low energy photons of microwave background radiation, the feeble relic of the big bang.

How well does this density match up to the density of large objects in the universe? The typical distance between large galaxies is about 2 Mpc, so we can see what the average density would be if a galaxy like the Milky Way were the only object in a box 2 Mpc across.

The mass of the Milky Way, including dark matter, is about  $10^{+12}$  M. Sun, or  $10^{+12} \times 2 \times 10^{+30} = 2 \times 10^{+42} \text{ kg}$ . The volume of a 2 Mpc cube is  $(2 \times 3.1 \times 10^{+22})^3 = 2.4 \times 10^{+68} \text{ m}^3$ . The typical density is therefore mass divided by volume, or  $2 \times 10^{+42} / 2.4 \times 10^{+68} \approx 10^{-26} \text{ kg/m}^3$ .

Thus we can see that the galaxy density roughly equal to the critical density.

**∞ MORE FALSIFICATIONS: ONE FOR EACH GALATOM.**

**Epistemological truths vs. Falsification of 'ceteris paribus' analysis**

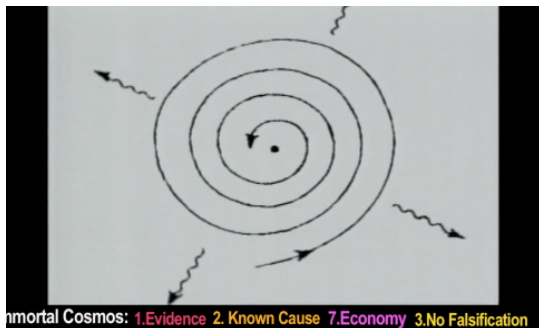
In the graph, epistemology is clearly in favor of the immortal fractal cosmos, as its experimental evidence is stronger, when we do not 'select' the phenomena to explain, ignoring all other facts (implosive galaxies, dark entropy, irregular distribution of galaxies, objects that live longer than the big-bang, and other proofs we shall consider all of which have a rational explanation in the fractal, organic, immortal Universe).

It leads to falsification (a theory is false when there is a single fact it doesn't explain or contradicts it – all of the above). Which leads to

Economy=Occam's razor, as the fractal Universe explains more facts with *only one* postulate – that we are made of TimeSpace without the need of a background abstract absolute spacetime we don't see anywhere.

All other facts of the Universe in all its sciences come from this first principle, which is self-evident – time and space exists – and already simplifies reality (there is no need for it to be detached from reality as its abstract background).

We can add other epistemological laws: the big-bang has no logic consistence (the singularity is an infinitesimal of infinite mass, which is absurd, time and space have a beginning which is absurd), uses ad-hoc proofs,



forbidden by the experimental method (equations are moved to the past ad hoc in lineal fashion to meet the theoretical temperature, proofs are taken in present time and space as local measures, but considered to be universal global in all parts of the Universe in space, not measured and all the epochs of time, not measured). And finally it has not Known cause for its creation. All those elements are solved by the fractal immortal Universe which is self-reproductive, hence it has its internal cause, it is eternal so it has no contradictions of time and space, and it accepts all facts, no-falsification.

So we gave an alternative physical theory of the Universe, which follows closer the laws of truth of the scientific method (Objectivity, Logic-Linguistic reason, Experimental evidence; Simplicity (Occam's razor), Correspondence (previous 'true theories', parts of the new one), Causal, cyclical predictability and Coherence (logic and mathematical reason), with the added perspective of pentalogic and its  $3 \pm j$  Ternary Complex, entangled reinforcing causality. It proved that the cosmic big-bang is:

It s a *creationist* theory based in *lineal* time, 2 cultural traits of German, biblical military cultures that invented it.

It is completely illogic and makes no sense at all – for god's sake indeed, a single point from all was created..

It has not enough experimental evidence.

It contradicts Einstein's dictum, 'the Universe is simple but not that simpler. Its false simplicity is based in a lineal equation ( $V=H_0D$ , Hubble's red shift equation), *which only applies to the empty space between galaxies, NOT to dark matter and galaxies; so its simplicity is a reductionism that does NOT explain most of the Universe* . Further on at present, not even this lineal equation works for the observed expansion of vacuum space, so as we learned more about the Universe, this 'Ptolemaic' theory requires all kind of 'epicycles added ad hoc' to fit the new data (accelerated expansion, inflationary first state, which brings the logic absurdity to hyperbolic limits – as the first picosecond the Universe must expand to a speed infinitely faster than light to reach its present size, breaking all the laws of known known science). So the big-bang simplicity is not scientific at all.

It doesn't correspond to physical & logic consistent theories with those laws of known-known science as it liquidates all of them, from the 'conservation laws of energy and momentum, and baryon number' to the logic laws of epistemology, but it is based in religious concepts - lineal Christian time & creationism – which not surprisingly pleased his first researcher – a catholic priest and the 'religious creationism' of mathematicians argued in the paper on 5D mathematics and its foundations..

And finally it lacks Causal cyclical predictability - it does not explain what was before and after; but the element it truly fails is one we normally consider a given for serious science, 'logic and internal coherence'. It has none. Because indeed it is creationist 'religious', as it requires external creators.

**RECAP.** A single black swan said Popper falsifies a theory of white swans. White is the color of entropy, black of information; *every particle of dark matter and every galaxy, that converts lineal entropy into information falsifies the big-bang, and there are  $\infty$  black swans. Never a theory was so obviously false, so much cherished by Æntropic men.*

## Δ: LOCAL 'LITTLE BIG-BANGS'.

### The meaning of time in classic physics.

Now, absolute relativity, the philosophy of science behind this T.Æ is even more radical in the separation of man from the Universe.

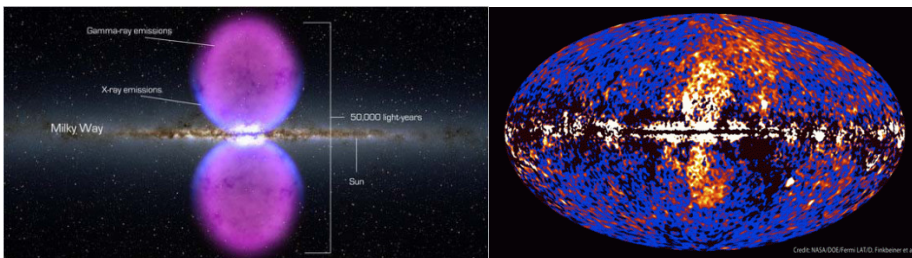
Every fractal part of the Universe is a super-organism that has obeys 10 sets of isomorphic laws, as parts of the same fractal space-time reality. We are all made of time motions, seen sometimes as space dimensions, hence equal in substance though not in quantity (spatial size) and quality (speed of information) and complexity (number of co-existing scales of the 5th dimension, bits of information and bites of energy a given Æ-knot commands)

However, all these points are subject to the ego paradox: as every point of view perceives a limited part of reality to 'fit' it into its relative infinitesimal point of view or 'mind, the 'whole' of each species understand only reality from its limited 'one-dimensional point of view', and considers himself from his '10th Dimension' as a whole, the only intelligent being of reality. Subjectivity is thus essential to the being.

And so it has been to humans, who always considered themselves the center of the Universe.

So alas, we shall latter expand those proofs of the falsity of the big-bang, which however can be perfectly explained as the big-bang of the lower scale of the 5th dimension below the cosmos, that is a quasar big-bang of a galaxy, either the previous cycle of the milky way galaxy, or the explosion of a giant galaxy in the local cluster, from where the local group fed on to reproduce the Andromeda and Milky way and dwarf galaxies around it.

A quasar big-bang we shall prove eliminates all those errors, the background becomes local and hence does not break Lorentz invariance (relativity), the galaxy has the same density of matter needed for the big-bang, a quasar is a reversal black hole explosion which happens to be the exact equation of the big bang (also a reversal black hole metric equation) the age of the quasar cycle tabulated between 10 and 20 billion years is exactly the same than the big-bang, it is NOT an illogic theory, as there are infinite galaxies in an infinite Universe the abundance of helium in galaxies does happen more in the center around the black hole where the hadron epoch formed them, and the ages of the big-bang do apply all to a quasar big-bang, and the local measure of the background radiation which FIRST and for very long was considered the background radiation of only the galaxy, fits, and as we shall see in the next picture, in fact the map of the galaxy is exactly the same of the background radiation:



*A galaxy (ours) and the supposed big-bang of the universe, which shows the same form and raises doubts about the local measure of that radiation (the reader can observe the central lobes of γ-radiation similar to those of the electron, which the prestigious astrophysicists Smolin and others were analyzing very carefully, since they thought they could see a different light speed in the upper and lower lobe after 13 billion years of time travel :)*

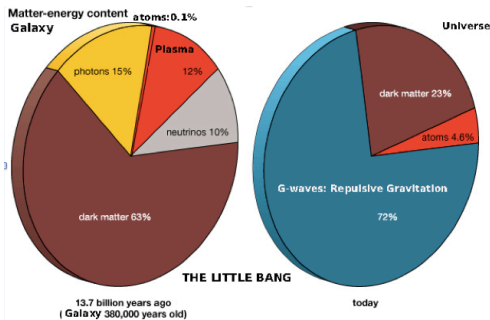
*All systems are a sum of quantic cycles that absorb, emit and transform spatial energy into temporal information:  $T \approx S$*

*That equation, decomposed sequentially in 3 phases, a first age of max. energy, a second age of balance and a third age of max. information, explains the existential cycle of any space-time field.*

In a graph with energy and information coordinates those 3 ages resemble the geometrical form of a cycle that moves upwards, absorbing energy and information till in its 3rd age loses its temporal energy, collapsing back to its origin. On the right side, the same 3 ages show in the Taoist, Korean flag, where a line is the symbol of continuous yang-energy, which yin-time quantizes into 'in-form-ation', from youth to death.

In the graph, the most likely interpretation according to the laws of the scientific method, resumed in the acronym formula,  $E=Sc^e$  (evidence, simplicity, cyclical repetitive 'laws', correspondence with previous theories and ternary Complexity, born of the iterative repetitions of the Generator of fractal, cyclical space-time), further proved by the 'ad ons' of 5D T.Æ: **T**ime arrows, **O**rganic structure, and **C**omplex Ternary symmetries in 5D cyclical space-time, added to that formulae ( $T.æ=Sc^3$ ); the most likely nature of the

big-bang is local – very likely the quasar big bang of a 20 billion years cycle of life and death of the Milky Way, a barred galaxy, which is today exactly in its form on the 14 billion years mark of that tabulated 20 billion years cycle of Barred galaxies.



All the problems of the cosmological big-bang both theoretical, metaphysical and experimental, quantitative can then be resolved. Theoretically the equations of the big-bang are just the entropic, reversed, death equations of a black star. Such explosion would account for the amount of Helium near the center of the galaxy, and the density of matter-

radiation, which coincides with that of the galaxy. The asymmetries and form of the background radiation obtained in local measures will coincide with that of the galaxy too. Its origin on the local big bang from the remote past, or most likely on the activity of 'Moon MACHOs', the smallest black hole particles of the 'triad' of 5D scales of mass in the Universe, which if having the mass of a moon planetoid (the most common cosmic object of the Universe) will produce exactly the same redshift temperature radiation. And so on and so on...

The fractal structure of the Universe on the other hand will account for the expansion of the intergalactic space, the cosmological entropic vacuum scale, where 'Gravitational transversal waves' will act as repulsive gravitation, in the same manner their microcosmic equivalent in the charge scale act between particles. While the vortices of contraction of vacuum energy into mass – galaxies will balance that expansion, on the flat plane of the spiral.

In the graph, we see then the characteristics of those multiple little quasar bangs, in which dark matter made of the heaviest 2 families of mass (top/bottom/charm quark combinations that form the atoms of black holes and strange quarks that form the core of neutron, pulsar stars and strangelets in the halo). Thus they would account for most of the mass of the Universe. In terms of mass energy, as we consider on the present formalism a 4-vector momentum with 3 dimensions for space and one for time-mass, ultimately we observe a 3 to 1 proportion between 'Lineal Space' (G-waves of repulsive transversal gravitation) and the dimension of mass.

The galaxy on the other hand, does NOT contain repulsive gravitation as it is the interior region of the galaxy atom, which is purely attractive. Its configuration is equivalent to the theoretical configuration of the 'cosmological big-bang' now reduced to the barred galaxy big-bang cycle. And so we find again the ternary symmetry of the III families of mass, which form the 3 components of the galaxy atom, its 'strangelet', negatively charged Halo, its positively charged central top quark black hole, its 3 invaginated networks of information and energy (neutrino and photon background) and the plasmatic ud-mass of light mitochondrial stars. What is the role of the planetoids made of atoms in which humans exist. They represent only 0.1% of the total mass of the galaxy, as almost all ud matter is in the form of star plasma.

So we might conclude, humans are NOT that important; an planetoids and planets on the 1 to  $10^6$  relative mass scale we find between moons and the heaviest Jovian planets which can be considered small not-ignited stars are the scalar range to feed strangelet matter that will end up in the Halo. This simple harmonic scale has only a problem: anthropomorphism. It makes us irrelevant, it puts the high popes of astrophysics back to Earth on their

*delusion of understanding the whole with a human self-centered perspective, and certainly makes sheer madness the experiments now carried out on Earth in search of self-feeding self-reproductive dark matter (strangelet quark-gluon soups, now starting to be produced at industrial scale at CERN and future accelerators at China).*

We can now consider if briefly the ages of the Little-bangs that happen all over the Universe every time a Galaxy lives and dies, returning to the Dark World. Even if we were describing the Little Bang of the Cosmos, it is a necessary perspective for the ego-centered human to reduce its cosmic, galactic, universal epithets to the lowest of all perspectives, that of a microbial species, 'Cantor dust of space-time', 'rational zero interval of the irrational infinite', humble 0-mind who matters not more than mater. And this I advice to the reader, because it is the best way to survive and go around the Universe.

Even if the cosmos had a big bang of 14 billion years, from  $\Delta+5$  it would be an infinitesimal point dying away on the truly absolute Relative Universe. So we will call all big-bangs, little bangs. As that is the meaning of it.

Now this is the most likely reality – a Universe in the  $\Delta+4$  plane, beyond the  $\Delta\infty$  human perspective of a relative infinite number of galactic anti-atoms (as the symmetries of 5D are inverse and so we need to jump two scales to find a similar being, 2 scales of life to find robots-like insects, to scales of cells, to find nations-like cells, DNA-like humans, and so on.)

So those anti-atom galaxies might be part of a larger bang, the cosmic little-bang, which however would be of a dimensions that we, infinitesimal inhabitants of a galaxy anti-atom cannot even imagine and it is not worth to explore.

So we shall reduce ourselves to the description of the Little Bangs, we do know about, with the laws of 5D physics.

#### **Death of micro-light waves.**

Now in 5d physics, tiredness=death of light is not provoked by the smearing of light paths by dust and other 'chance' collisions of light, which would rightly as Zwicky pointed out smear the image of far away galaxies, but exactly as in the cosmic big-bang and general relativity by the expansion of the underlying space-time 'scale' of the Universe,  $\Delta-1$ . The difference though is that in 5D physics:

- The c-limit of speed only applies to 'galactic space-time', where the underlying gravitational space is 'contracted' by the  $-c^2t^2$  factor of special relativity (simplest formalism), due to the frequency creation of time-information by light over the underlying gravitational space-time.
- When this gravitational space-time is liberated from galaxies, it 'stretches out', dissolving its information into entropy, and its speed becomes 'NON-LOCAL', from the point of view of a light space-time observer. The formula is immediate. As  $V=S/T$ , and Time stores information, as information disappears (invisible gravitation), then  $C=S/o\text{-information} = \infty$ . Thus the Universe becomes infinite non-local and this allows that the cosmological  $Un+4$  scales IS connected into a present 'spatial view' (the previous artistic graph).

Now this fact is essential to the scales of 5D systems, as it ALLOWS the fundamental symmetry between time ages and present still space-organisms. All SCALES of the 5th dimension MUST have a force able to create a relative simultaneity in a single time quanta that communicates its parts to create balances and metabolic equilibriums. Thus there MUST be a relative non-local faster than light speed, with less T-information, and this is 'dark energy'; which we consider to be the 'repulsive electromagnetism', of the galactic atom.

It is then easy to see that the speed of such G-waves would be infinite in terms of human perception, and the quantity of information they carry minimal. Indeed, if we consider a 'Hertzian' wave at this scale, it would carry a bit of information for several parsecs. But it would allow a spatial view of the Universe.

All this of course belongs to metaphysics, which as we said is the true nature of cosmology, as there is no way to perceive experimental evidence 'outside' the halo meaningful.

Yet the linguistic isomorphic method make us to consider a reasonable assumption that scales beyond our perception will follow the same isomorphisms of scales within our perception. So we can use the same formulae and deduce the non-local invisible nature of G-repulsive Giant Transversal gravitational waves between galactic-atoms and within each internal atom, to control the stars and halo of the galaxy.

Now from the perspective of a light space-time observer the space-time between galaxies, being invisible won't be observed as a tachyon, faster energy wave, but as a dilating distance. And so it will be seen as a cosmological expansion of space (balanced by the implosion of each fractal galaxy atom, to maintain the whole Universe in immortal balance).

Thus the effect on micro-light waves will be the observed red shift.

Indeed it follows that what we call light does travel through the expanded intergalactic gravitational space-time, and red shifts.

A second phenomena also must be observed, namely the 'internal' death of light, as all forms of the Universe do have a world cycle. The light world cycle is likely to be of a mean 10 billion years similar to the life cycle of its 'photonic quanta', the stars of galaxies, which are basically dense configurations of light and plasma; the equivalent to the particle state of light. And this 10 billion years light world cycle is what we observe with an expansive age of light as it goes through the world cycle, further accelerated in the 2<sup>nd</sup> part of the world cycle (5 to 10 billion years).

It follows also that the furthest stars will emit 'younger', longer living light, so the further we look onto the galaxy, we shall see arriving to our galaxy, only younger stars, till a point where we do not see more light coming.

Further on, as all forms are relative 'pi-cycles', whose membranes do NOT let see the external universe except by its 'holes', the halo of the galaxy must limit as all membranes what we perceive from outside. This again happens in any entity inside a super organism. Our cells do NOT see the external world, and only the sensorial eyes do see it. So the next question is how much is 'dark energy-space-matter-form', from an inner observer of a relative fractal knot of space-time.

The calculus of an ideal pi cycle is immediate. As a pi cycle is made of 3 diameters, with outer holes between them, in our curvature electronic space-time minds, where pi is 3.14, we ONLY see through 0.14 holes of a 3.14 diameter. so there is a 3/3.14 darkness, of regions we do NOT see from the interior of a pi cycle.

As it happens,  $3/3.14 = 96\%$  which would be the dark world for any inner relative mind point of view. As it happens dark matter and energy accounts for 95%, which is there and we do not see. It is then the halo the membrane that 'darkens' the Universe?

We do have for the sun the membrane called the Oort and Kuiper belts... But they are internal to the super organism of the galaxy, so we shall discuss it on its scales. but still they do darken part of the galaxy despite being internal 'open' cells. The galaxy though IS the true fractal point (the equivalent of the atom, darkened by the electron and the Nuclear force cover).

So the reader should understand how much uncertainty exists in cosmology.

Back to our theme of the cosmological redshirts and its now '3 causes' (as always in the ternary Universe) we can write them within a Generator equation, this time expressing the 2<sup>nd</sup> Non-Euclidean postulate of lines≈waves of communication:

S (emitter: Original red shift by expansion) < ST (red shift by wave dying) > S (Halo, likely 'blue shift' back to create background radiation and reduce to c-speed the wave).

Those 3 components are just a case of the Fundamental equation of particle physics:

$$S(\text{Fermion}) < ST (\text{Boson wave}) > S (\text{Fermion})$$

...applied to the upper cosmological scale.

The study of that equation in 5D physics is an entire field of cosmological research for future 5D cosmologists, if we survive the age of 'lineal macho-man Neanderthal physics'. So here we shall make some comments on the death of light (ST cause).

As light dies away it is canonical in 5D astrophysics that entropy will elongate as all death processes the space-time, which in terms of the duality motion=form (Galilean paradox) means an increase of distance. Moreover, because light does have a 10 billion mean age (same for stars made of light, here the part does live as the neurons and the head, the same than the whole but NOT longer; so light dies before the stars mean life). This moreover explains why after 5 billion years, its maturity at the height of its world cycle, life accelerates its death-elongation into red color, till fading away. Which also explains why we do NOT see more radius to the Universe:

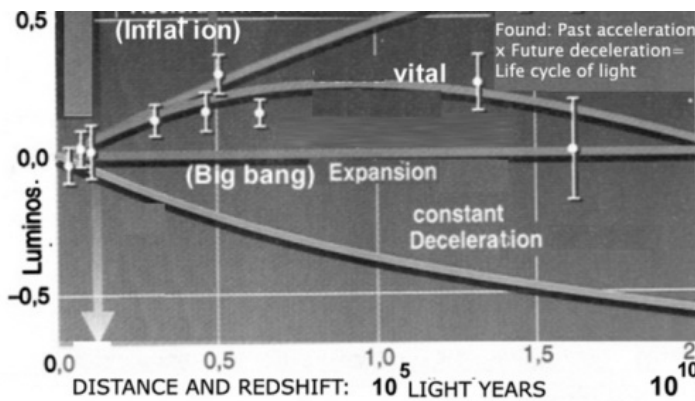
Light cannot come from beyond that radius because that is the limit of its life NOT the limit of the whole, but of its waves of information, its minimal part.

Indeed, it seems that light beams and light-evolved entities (stars) have a mean cycle of 10 billion years, after which they suffer an energetic big-bang expansion – stars explode into Novae and light gets tired and expands in a redshirts process, returning to its gravitational, non-local lower scale of dark Entropy.

This of course explains why far away light red shifts and seems to expand space: it is dying and beyond those mean 10 billion years an increasing 'darkness' is observed in the Universe, which a simple Gauss curve of probabilities show to be almost absolute beyond the x+1/3rd 13.3 billion years range.

Again physicists don't see both, the dual space and time views of the Universe but only the temporal big-bang, which considers a cosmos in time failing to analyze it in space as a simultaneous system connected by non-local gravitation. So they think darkness is not caused by the spatial death of light, which they merely use as a clock of cosmic time, thinking therefore that beyond those ages we enter into a temporal darkness – and the Universe didn't exist.

*In the graph, we illustrate how complex physics, using the same data that Simplex physics of a single space-time continuum can resolve the puzzles of the Universe. Cosmologists have found that light coming from far away galaxies seems to decelerate and accelerate its red shift till dissolving around  $10^{10-11}$  years after its emission. And they affirm this is a proof of an expanding Universe, as they apply a local phenomenon, the life/death curve of light self-similar to the life-death curve of any entity, which increases its frequency till its 1/2 life and then decreases, becoming tired till death, to the entire space-time of the Universe (a global symmetry).*



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*The tiredness and world cycle life-curve of light however only applies to a local phenomenon: light tires and red shifts at the end of its journey, dissolving back into gravitational dark-Entropy, which is perceived as*

*an expansion of the light-membrane, but that effect is compensated by the contraction of space into mass in the galactic vortices giving us a zero-sum.*

## 5D Lorentz Invariance: A 4D cosmic electron membrane of the canonical big-bang.



We do NOT fully deny the cosmic scale of the big-bang, which 5D somehow makes logic (it would just be another scale of big-bang of an atom-Universe. There are certain basic numbers that back that opinion. The number of galaxies,  $10^{11}$  is the constant of social order between planes of the 5th dimension.

The relationship between the Force of Gravitation and Charge (temporal curvature), is according to some estimates (already noticed by Feynman and I believe Eddington), the same that between the radius of the proton and the Cosmos (spatial length). So it fits in 5D Metric:  $T \times S = K$ , better than a possible 'local cluster' big-bang with lesser radius. But those numbers have been varying a few potencies of 10 here and there. In any case it is a proof of the force of 5D metric that even if we ultimately reject the cosmic big-bang for lack of experimental data, we can for the first time explaining rationally without creationist ideas.

*The spatial symmetry on 5D big-bang; all galaxies are in the expanding membrane of the 'electronic cover' of the cosmic neutron explains Lorentz Invariance nicely.*

Now in the parlance of physics, this mind point of view is called 'relativity', which implies we cannot distinguish frames of reference when we choose one at its center.

Now in the present format, the 'subjective use of the human frame of reference' at the center of the big bang, could seem a misinterpretation of the meaning of the Lorentz Invariance to suit 'us' - ultimately another 'anthropomorphic', man in the center, reality only what man can see, subjective theory of religious 'nature'.

But this would be an easy critic. An not an accurate one. Since In the case of the previous picture for that to be real – not frame of reference – the solution of physicists is obvious and quite smart and realistic: the entire picture is actually NOT a 'volume' but a membrane, like the expanding surface of a globe. If all the galaxies were pegged in the expanding surface of an SP-Membrane any POINT would see the rest of the cosmos which being so 'large' would appear as a flat surface, in the same way we see the Earth as a flat surface and any point on the Earth could in principle if light would curve a bit through the surface see the entire globe as a flat picture.

Of course those models are available in the 'avalanche' of 'fantaphysics', that is mathematical games without a criterion of selection. On my view the more interesting is the one of Mr. Merab Gogberashvili where he shows that if the Universe is considered as a thin shell (a mathematical synonym for "brane") expanding in 5-dimensional space then it is possible to obtain one scale for particle theory corresponding to the 5-dimensional cosmological constant and Universe thickness, since it solves the hierarchy problem in a similar fashion – in this case the smaller scale of particles do have more 'energy and information – that extra-dimension and further on our Universe is stable since the extra component of the Einstein field equations giving the localized solution for matter fields coincides with the one of the conditions of stability.

Latter the Americans proposed the closely related Randall–Sundrum scenarios, which have as usual become more popular with the Anglo-Saxon drum beat of self-propaganda (this is common in the history of science since the times of Leibniz to the times of Landau->Hawking and Linde->Guth).

Now in our terminology this means the following, generalizing it to 5D Geometry, which is NOT so much concerned with 'spatial geometry' but with the arrows of energy and information that transit between scales:

Now one of the beauties of 5D science is that we can take any relative  $\Delta \pm i$  scale in our analysis of reality and change slightly the perspective and will get a meaningful view of it all. So when we take the largest  $\Delta + i$  perspective on the being we see it as indistinguishable atoms, but if we have an  $\Delta - 1$  perspective it looks like a 'living cell', which is a very convenient perspective to study the whole, as we observe it perfectly together, surrounded by a cyclical time membrane, with a nice central o-point and a series of perfectly designed organic cycles.



This is the perspective we can have of a nation, as a cell of the superorganism of history with its borders, human DNAs in its homes connected by networks of economic energy and legal information. Or the perspective of a human cell-citizen, or a biological cell. This is the best way to study the galaxy as a cell of the superorganism of the Universe made of 10<sup>11</sup> of such cells. The structure of the galaxy cell thus will 'focus' this article, since it is the perspective, which we can elaborate with a minimal amount of information to make it a likely truth.

Of the Universe as a whole we cannot make such a big statement of truth, as astrophysicists, human ego-centered masters of the Universe think, but we can keep exploring their cosmic big-bang, and explain it as a 5D probable truth. We shall see it is of the two possible explanations – an extensive Universe of multiple atoms/cells/galaxies well beyond the limit of the cosmic horizon, vs. a growing beta decay universe or a cellular organism, the 2nd likely explanation. So for probabilities of truth, we range them as:

Max. truth: quasar big-bang < Med. Truth: Cosmic big-bang < Min. truth: cellular cosmos.

Ultimately though the 3 of them admit a larger  $\Delta+1$  scale of the Universe, a... Hyper-Universe and big bang death.

### **The mimetic ages of Little quasar bangs.**

Now it what follows we are going to deal mainly with 1 theme, the organic structure of the Galaxy and its parts according to the Generator Equation.

It is within that structure that big-bangs of any of the scales of matter represent merely the entropic death of the matter vortex in a quanta of time according to the equation of death of any system, physical or not

Death-big bang equation:  $S \ll T$ : Max.  $T \times \text{Min. } S \rightarrow S_p = \infty \times S = 0$

So it is not a big deal, which is the scale. As we have explained it matches 5D metric including the inflaton field:  $T \times S = K$ . Thus in an infinitesimal time quanta ( $10^{-42}$  in the big bang), in a similar account the Universe expanded a similar quantity ( $10^{42}$  proton radius in the big bang). It is simply too large with the data we observe. So we imagine that the QUASAR-bang will follow exactly the same metric, and ages of the cosmic bang, but the relative Time speed of the Galaxy when the bang-death of entropy of the black hole took place will be slower, of the range of top quark interactions ( $10^{-25}$  seconds) and the diameter of the central black hole once it expanded after its death will be that of the galaxy:  $10^{21}$  meters.

In brief, the ages of the Little bang are far less speculative as sciences must be than the big-bang. Its first quanta of 'death' of the black hole did start when the speed of time clocks of the black hole went under the mean life of its particles, top quarks, which are the likely cut-off atoms of the black star. As the little bang expands the galaxy in a similar fashion to a double beta decay that expands the nucleus up to 100.000 times to create a hydrogen atom.

Thus time slows down to the 'year' cycle of its  $\Delta-1$  'cell', which is the angular momentum of most star systems, the 'photons of the galaxy-atom', taking our planet orbit as a mean for them, in the same manner that the cycles of a living human being slow down from its faster seminal system to the day cycle – the mean cycle of its cells, the  $\Delta-1$  scale.

This is the application of 5D physics, NOT of weird laws of time. But of the metric of the 5<sup>th</sup> dimension and the processes of growth of systems which are synchronized to the slow down of its internal time cycles at the  $\Delta-1$  cellular lower level. At this moment the system is synchronic between its 3  $\Delta\pm 1$  scales and its space-time measures are in relative proportion.

What is then the growth of the little big-bang. Simple to calculate. If a nucleus of an atom grows 100.000 times to become the electron radius, we just need to multiply the year time of the 'new galaxy-atom' for 100.000 times of expansion, and the galaxy should be approximately 100.000 light year of radius.

The same happens in the atom, even if physicists do not understand as they do NOT use variable time clocks, DO NOT relate time clocks to space curvature and attractive power.

But we do have all the data. So in the atomic nucleus, the clock speed slows down ≈ the attractive power diminishes ≈ the curvature diminishes ≈ as the radius of the strong force grows to the radius (clock-curvature-speed-angular momentum) of the Electron. And again we can do similar calculus: the electron of the Bohr radius has a mean speed of 3.000 kms, which multiplied by the fine structure constant gives us the c-speed, or space-time speed of the proton-black hole vortex radius, which is 100 times stronger than the electronic force – again the same relationships in proportions and decametric scales).

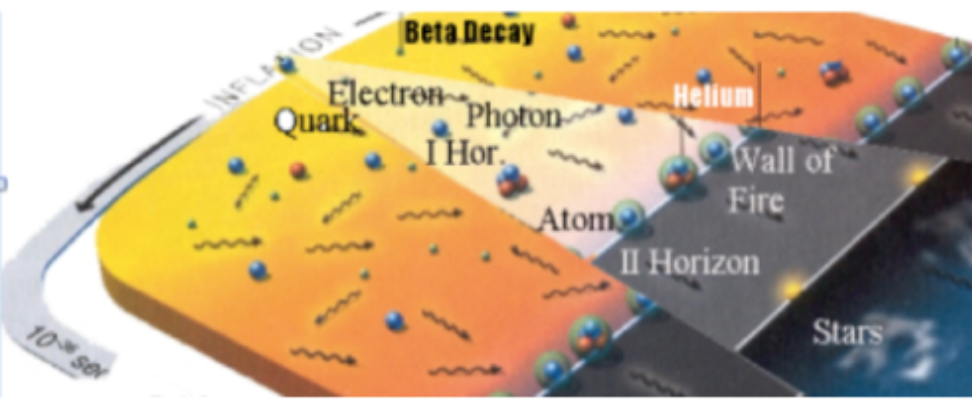
So back to the galaxy that should stop its expansive phase when the clock goes down to a year orbital sun and 100.000 light year diameter. Well, thus experimental evidence confirms this process? As it happens 100.000 years light is the diameter of the galaxy.

This also means that the meaningful nucleus of the galaxy should be around a π light year or parsec, even if the ‘quark zone’ – or true central black hole is even smaller, but we must remember the quarks are surrounded of a cloud of ‘negative pions’, ‘massive particles, equivalent to massive stars. It is this the case of the black hole?

As it happens, the central parsec around Sagittarius A\* contains thousands of stars. Although most of them are old red main-sequence stars, the Galactic Center is also rich in massive stars. More than 100 OB and Wolf–Rayet stars have been identified there so far. They seem to have all been formed in a single star formation event a few million years ago. The existence of these relatively young stars was a surprise to experts, who expected the tidal forces from the central black hole to prevent their formation. This *paradox of youth* is even stronger for stars that are on very tight orbits around Sagittarius A\*, such as S<sub>2</sub> and S<sub>0</sub>-10<sup>2</sup>.

Now this and many pages of astrophysical studies that we shall pour on the 4th line when dealing with the organic galaxy merely shows the 5D symmetry, the organic structure of the galaxy that follows those ternary

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on them, since actually I do not have anyone taken seriously 5D life in the nice Palma Island I don't care less for the galactic

amous not so much in size in any way we shall introduce some fict belief in the limits of the Universe.

$$t_{Planck} = \sqrt{\frac{Gh}{c^5}} = 1.35 \times 10^{-43} \text{ sec}$$

In the graph, the quasar Little-bang, is the same process that the cosmic Little-bang but limited to the inversion of a central black hole, which dies and goes through the same phases the inflation period, is the period of black hole explosion with its gravitational waves that create the underlying structure over which the following epochs will produce as energy cools down the different particles of the galaxy. This is what it is recreated today at CERN, and might provoke the strangelet formation on its 'initial ages', which are stable used lumps that could swallow the Earth.

There is besides the job of straighten up of the errors of physics regarding its space-time symmetries a more general analysis of great beauty, which consists in the translation of the 'Ages of the Little-bangs', of any type of scales into the ages of the known-known particles of matter, as the slow down of speeds of time and enlarging of spaces allows the symmetry to break into the positive and negative sides of each 'plane' of the Universe.

It is not so different from classic astrophysics, except that is simpler more symmetric, experimentally sound, theoretically meaning and so it makes sense (-;

Now of course we can add for the pleasure of those clueless astrophysicists crunching numbers the unknown scales of the possible atomic cosmos.

They start 'faster' than we do. The little bang of the most likely scale of Galactic matter, explains HOW FROM THE c-faster ok colder, super fast time cycles of the Higgs-top quark-black hole fields, through the 'creation of  $\pm$  symmetries of speed, energy, charge, and momentum', all other forces and particles are born.

The **chronology of the Galaxy** describes the history and future of the Galaxy according to Little Bang cosmology, the scientific model of how the Galaxy developed by this point of existence, which is a world I itself (;

The big bang though of the atomic cosmos starts its time on the Planck epoch, using the cosmological time parameter of commoving coordinates (never mind what it means, nothing really :)

As of 2016, this expansion is estimated to have begun  $13.799 \pm 0.021$  billion years ago! – you know how 'precise' are the scholars who know nothing but think to know it all – humans after all. Wouldn't be a bit less 'obvious' to say just 13.8? (-: LOL, do remember that the exact minute of creation was precisely estimated last century by a British priest on the A\$\$-breeders calendar, now running at 5777 – 7 being the magic number of Babel...

It is convenient to divide the evolution of the atomic Galaxy or cosmic string, so far into three phases. They just differ in its reality. In brief, the first age of the cosmic big bang is largely speculative and simply accelerates time to the minimal time possible in physical parameters of the 'light speed limit', the so called Planck Units of mass, time (the speed of light crossing the minimal radius of a string-neutrino, etc.)

### **Fantaphysics. The I never proved age of Cosmic physics.**

Before a time classified as a Planck time,  $10^{-43}$  seconds, all of the four fundamental forces are presumed to have been unified into one force. All matter, energy, space and time are presumed to have exploded outward from the original singularity. Nothing is known of this period. In the era around one Planck time,  $10^{-43}$  seconds, it is projected by present modeling of the fundamental forces that the gravity force begins to differentiate from the other three forces. This is the first of the spontaneous symmetry breaks, which lead to the four observed types of interactions in the present universe.

Looking backward, the general idea is that back beyond 1 Planck time we can make no meaningful observations within the framework of classical gravitation. One way to approach the formulation of the Planck time is presented by Hsu. One of the characteristics of a black hole is that there is an event horizon beyond which we can obtain no information - scales smaller than that are hidden from the outside world. For a given enclosed mass, this limit is on the order of

$$L=GM/c^2$$

where  $G$  is the gravitational constant and  $c$  is the speed of light. But from the uncertainty principle and the De Broglie wavelength, we can infer that the smallest scale at which we could locate the event horizon would be the Compton wavelength.

$$l = h/mc$$

Equating  $L$  and  $\lambda$ , we obtain a characteristic mass called the Planck mass. Substituting this mass back into one of the length expressions gives the Planck length

which happens to be the length of a neutrino, something physicists have not noticed too much but makes the neutrino the clearest candidate to be the quanta of the gravitomagnetic waves of the underlying structure under light. and the neutrino theory of light, the clearest form in which light is formed, as light travels its minima time frequency across this length is called the Planck time:

$$T_p = \hbar / Gc^5 = 1.35 \times 10^{-43} \text{ sec}$$

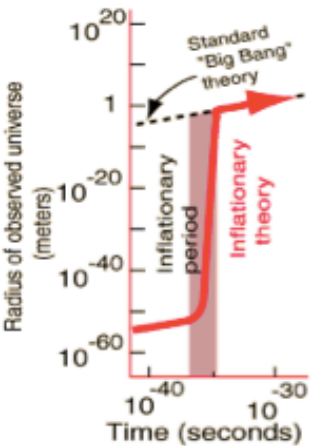
Which therefore will be in 5d physics the minimal wave length of light, the minimal 'planckton'. And we will return to that.

### Inflationary Period

In classic cosmology, Triggered by the symmetry breaking that separates off the strong force, models suggest an extraordinary inflationary phase in the era  $10^{-36}$  seconds to  $10^{-32}$  seconds. More expansion is presumed to have occurred in this instant than in the entire period ( 14 billion years?) since.

The inflationary epoch may have expanded the universe by  $10^{20}$  or  $10^{30}$  in this incredibly brief time. The inflationary hypothesis offers a way to deal with the horizon problem and the flatness problem of cosmological models.

Lemonick and Nash in a popular article for Time describe inflation as an "amendment to the original Big Bang" as follows: "when the universe was less than a billionth of a billionth of a billionth of a second old, it briefly went through a period of supercharged expansion, ballooning from the size of a proton to the size of a galaxy (and thus expanding at many, many times the speed of light). Then the expansion slowed to a much more stately pace. Improbable as the theory sounds, it has held up in every observation astronomers have managed to make."



Which is none, zero, nill, zip'. Nobody has observed the grapefruit, let alone the Planck Mass, LOL. The problem of course was that to make so big the Universe, and connect all its parts, they needed this concept and so they fitted in.

So what this inflation means in 5D cosmology? Merely the expansion of the black hole 'neutrino and gravitational wave' over which light will be imprinted in a second phase.

Of this the Grand Unification Theory (GUT) - the final unification that has been called a "super grand unification theory", and becoming more popular is the designation "theory of everything" (TOE) says very little. Since physicists "theories of everything" are separated by two great leaps beyond the experiments we could ever hope to do on the Earth.

In that first phase, the very earliest atom-cosmos was so cold and perfectly ordered that its time clocks with no entropy could turn at an amazing faster than  $c$  speed of 1000  $z$  in a present 'liquid wave' of absolute no friction.

But of course, 'lineal entropy physicists' which become surprised every time they find some cold working non entropic reality (which we have been predicting for 3 decades - the last one the quark gluon perfect liquid, which they still call 'plasma' :) take of a hot, energetic substance.

Hot is of course meaningless outside the entropic gas-molecular state where temperature is a meaningful parameter.

Never mind. According to prevailing scientific theories, at this time no matter particles existed (hence some divine creationism would act soon ;) perfect explanation for the time speed and inflation of those first moments, you know God is absolutely powerful.

Now in this theories the distinct forces we see around us today were joined in one unified force. Space-time itself expanded during an inflationary epoch due to the immensity of the energies involved. Gradually the immense energies cooled – still to a temperature inconceivably hot compared to any we see around us now, but sufficiently to allow forces to gradually undergo symmetry breaking, a kind of repeated condensation from one status quo to another, leading finally to the separation of the strong force from the electroweak force and the first particles.

This in the parlance of abstract physics. In reality, it was of course all the way around. The ‘death’ destroyed the perfect cold order of the super-quark-gluon liquid vortex of the hyper-black hole of super top quarks, and the hyper luminal rotation produced through the Kerr axis tachyons at superluminal speed, which expanded the Universe...

But all that is meaningless, so we just will ignore the whole mysterious things and not fill another 20 or 30 questions never answered about the cosmic big-bang (inflation formation of galaxies, isotropies not found at large scale, etc. etc.) as the little galactic big-bang shows no problems of any kind, the back ground radiation meaning simply the galactic background of neutrinos and light produced by the ‘top quark star’ little bang.

## T: AGES OF THE GALAXY. ITS WORLDCYCLE.

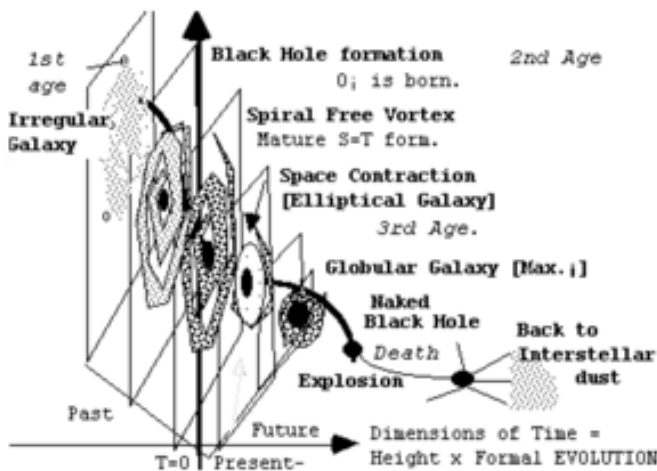
When dealing with astrophysics in a future world of science, there should be no difference with any other science of scalar organic existences.

The principle of conservation of energy would be derived of the principle of conservation of time, and its 3 standing points that maximize conservation, the point of reproduction in balance between temporal energy and spatial information,  $S_i = T_e$ ; and the two maximal points of  $S_i$  (Max. social evolution) and  $T_j$ . Maximal motion, define the 3 ages of physical organisms, called states in matter, as in any other system of nature. Those 3 ages would be also studied in cosmology as the origin of the ages of Galaxies shown in the H-R graph. And its  $s=t$  symmetry in space, the ternary principle of diversification of species,  $\text{Max. } S < S=T > \text{Max. } T$  will also be considered. From them, we can trace the existence of galaxies and its different forms, as any other organic system of the Universe. Let us then do so in a brief treatise on the ages of galactic life.

That first course on astrophysics would need little mathematical physics, but on the organism of the galaxy and its life-cycle, in which human beings are inscribed. Such a humble world would realize 'man is just a mush over a lost rock in the corner of the milky way' and aware of its cosmic nonsense, would likely preserve its existence, the only reason d'être, much longer that it seems bound to do. For a galaxy is just an organic system, akin to a cell of the larger scale in its life properties, quantitatively similar to an atom in its mathematical properties, of a larger hyper-universe, and this plane a speck of dust turning around a sun-like photon. And yet even if the quantitative analogies between the galaxy and the atom are perhaps the most astounding mathematical feat of 5D, we shall here just consider that introductory course of a future high school.

On the nature of the hyperuniverse little would be said, unlike present cosmology of hyperbolic egocentric bigbang theorists. Regarding the big-bang, of course, the name of the theory has been changed long ago. Now it is called the little bang theory, as its 'scale' is that of galaxies, similar to a double beta decay of a neutron, and *certainly not the central part of astrophysics, as nobody studies obsessively the death of an organism, which is what a little bang means, but the life of it, and its organic inner structure that peg together its parts into a whole.*

### Life ages of galaxies. The Three Ages of Galaxies



*In the graph, the life cycle of a galaxy goes through  $3 \pm i$  ages, evolving from a young, extended nebula into an old small swarm of top black holes of dark matters that explodes in a quasar (Little bang of dark Entropy and quark matter), astrophysicists confuse with the explosion of the whole Universe. In between, galaxies live a long, mature, cyclical steady state, fluctuating every 14 billion years between its spiral and elliptic form, while absorbing interstellar dust, which creates new stars and feeds the central swarm of Top Holes.*

Because the galaxy is an  $\Delta St$  system with  $\Delta$ -organic and quantitative, numerical properties,  $S$ -topological ones and temporal dimotions and ages, the structure of a galaxy can be compared according to the

homologies of the disomorphic method in its self-similarities with the 'elemental' units of each scale of reality - with a quantitative atom of the  $\Delta-1$  scale - hence the name galatom for such dual analysis and with an organic  $\Delta 0$ -cell of the human scale, as a galacell, with a central DNA of social swarms of top quark stars and a protein-like membrane or halo of quark, dark matter, made of energetic strangelets *which the mind egocentric paradox denies to all species. Since man only gives its most cherished organic properties to species of its scale, as its mind perceives maximal information in our scale, from a self-centered point of view.*

*As in all other sciences, 'ænthropic' humans project its 3 fundamental errors into cosmology:*

- *The anthropic errors of denying life nature to all other species; the creationist error of denying hilomorphism and scalar parts to point-particles and black holes, which are made of substance that can only be according to its density and gravitational attraction of top quark holes and bcb atoms. SO their proper name should be top quark 'frozen stars', as Einstein named them, NOT black holes; a name long dismissed in our 'future high school' course.*

- *And 'entropic' simplifying errors (lineal time, entropy as its only arrow, and entropic theories of reality). So they confuse also in the galaxy, the 'death' moment with its birth (quasar, big bang), and , the main errors of astrophysic ).*

Thus, the ages of a galaxy in its time worldcycle are the same  $3\pm i$  ages of in any other space-time supœrganism. Each of those ages can be further subdivided according to the trinity laws of the fractal generator *in 3 sub-ages and have 3 different Space-time origins.*

Thus, a galaxy can be created by 3 different processes, proper of the trinity of reproduction:

-*i: Seminal conception: Galaxies are created by the customary 3 types of Max. St, ST & Max. Ts reproductions:*

-Max. Te: Reproduction by an excess of entropic Energy:

A galactic Little-bang quasar catalyzes the evolution of gas into stars. This birth is similar in  $\Delta-1$  to a star 'Novang' (former nova :) that catalyzes also the creation of stars or a hypothetical  $\Delta+1$  Universal Big-bang that catalyzes the creation of galaxies, but of which all proofs are hyperbolic exaggerations of Little Bangs.

-  $Si=Te$ : Reproduction by balanced ST-evolution: Palingenetic conception, when the informative nucleus of Top quark holes of a giant mother-galaxy emits a huge jet of dark, quark matter that ends into a baby galaxy.

- Max.Si: Informative reproduction: Social evolution of energetic gas that creates complex star structures.

- $S\approx T$ . *Maturity/reproductive age.* Galaxies enter their steady state of reproduction, in which its spiral structure matures: stars gather in social groups and at its center a Top quark hole, the informative nucleus, structuring its body of toroid, cyclical paths of stars.

Galaxies then mutate back and forth, from spiral into elliptical vortices of mass, feeding on interstellar gas, in a cycle that creates and destroys its spiral bar every 13 billion years in a quasar *Little-bang that renews the Galaxy and coincides with the parameters of the cosmic Little-bang of continuous models of space-time.*

- *Max S; information age:* In their 3rd age, once galaxies exhaust their interstellar gas, their central Top quark holes digest their star bodies, becoming globular, spherical forms with a hyper dimension of informative height, till they exhaust all their star Entropy. As dark galaxies, without the drag limit of c-speed caused by their electronic and radiant matter they now accelerate as pure top quark holes up to  $z=10c$ ; forming invisible, complex networks of dark matter.

As all systems that go through  $3\pm i$  ages of evolution, the final stage after its 3<sup>rd</sup> informative age has '2 solutions', death and reversal of form into Entropy or 'transcendence' into a higher super-organism, communicated by the language of information of the system (so insects evolved into successful anthills while others become extinct and humans evolved into societies while most other mammals became extinct). Thus:

- ( $\Delta-1$ ): Some galaxies die as quasars, becoming again according to the inverse symmetry between the 1st and 3rd youth and old age of all systems, irregular galaxies that will feed a new cycle of galactic creation. So irregular galaxies are both the youngest and oldest forms of the Galaxy, a fact that still confuses cosmologists.

- ( $\Delta+1$ ): And those with a higher quantity of informative black holes in their nuclei evolve socially as cannibal galaxies, forming galactic networks in cellular groups that evolve socially into the large scale structures of the

Galaxy. Their central Top quark Holes grow, swallowing radiant matter at growing speed, and perhaps evolving with many other galaxies into a cluster Galaxy, of which there is not enough experimental evidence.

Thus, we differentiate the Little-bang or death of any scale of the Galaxy from a Little-banging or reproduction and self-organization of the present Galaxy and a 3rd age or Little-crunch, followed by a Little-bang or a process of emergence into a superorganism, which creates a generational cycle for any fractal space-time in 3±i ages.

*The Huge Galaxy and its galactic, fractal Little bangs.*

Since the age of a galactic cycle, 13 billion years, is the same that the age of the cosmological Little-bang, as Fred Hoyle affirmed, the cosmological, continuous Little-bang might be the sum of all galactic, fractal Little-bangs and the Huge Galaxy is not expanding as a whole. It will exist in a steady state, in which the knotting of space into mass by galaxies would compensate the expansion of mass into dark Entropy in the interstellar vacuum, which causes its expansion. Further on Little-bangs at the lower galactic scale, caused by the quasar explosions of its central Top quark holes when they break their bars every ±14 billion years should be the origin of the second proof of a cosmic, continuous Little-bang - *the excessive quantity of helium in the galaxy* - found precisely in bigger quantities on top of the central Top quark hole. Finally, background holes born of planetoids would redshift radiation at 2.7 K. Thus a fractal quasar Little-bang provides the same experimental proofs and better theoretical explanations, eliminating the multiple contradictions of the cosmological Little-bang.

Thus, a *steady state* theory of the Galaxy combined with a fractal theory of multiple Little-bangs/quasars, as it was reformulated mathematically by Fred Hoyle, in which the multiple, constant Little-bangs of galaxies into quasars are responsible for helium formation, redefines the Galaxy as a huge fractal scale of cellular galaxies in eternal balance with the expanding space, where light devolves back into 10 c dark, gravitational Entropy and dark Entropy warps into light by redshift and dark matter into galactic matter, imploding space:

$$T (\text{dark Entropy expansion}) = S (\text{dark, quark matter implosion})$$

Such balance, coupled to the constants of proportion between the energetic and informative elements of a complementary system, explains also, without appealing to the magic anthropic principle, the universal balance between matter and radiation, whose probabilities otherwise are null. Indeed, why matter and Entropy are in balance in the Galaxy at this exact moment in time, in a proportion of 1 to 3 (as mass is bidimensional and radiation 3-dimensional) if their relationship is dynamic, changing all the times, with Entropy winning the battle and expanding faster?

The answer is: because the Galaxy and any partial system within it exist in 3 to 1 balances between their Entropy and information/mass and when those vital constants of balance break the system ceases to exist.

*Recap.* Galaxies live through the 3 same ages of any space-time, born as seminal flows of dark Entropy and electromagnetic radiation, ejected by giant galaxies that condensate into quarks dark matter and an explosion of electronic forms and the creation of atoms and stars, start the reproductive age that will collapse into a central Top quark Hole, back to the original quark-gluon soup that gave it birth.

While the study of the different isomorphism should go on line 3, as I was looking to old 2 decade files of the first self-published book with 5D physics (physics of time, now 'extinct' unless some 'Nobel prize' or university kept it), I found this funny graphs, on the duality and ternary symmetries that give birth as usual in all systems to the 6 main species of 'female ternary space-time species' and 'male ternary space-time species', to use the organic jargon I have always preferred and of course made T.Æ unpalatable to any reader in the past (-:



### Galaxy in time: from nebulae to quasar little bangs.

*After the Little-bang, the Little-banging reproduced and evolved the huge Galaxy in 3 Horizons of growing complexity: the age of atoms, celestial bodies and galaxies.*

If we study the huge or cellular Galaxy in time, we differentiate in its evolution the 3±i ages of any space-time:

$\Delta-1$  (Past): *The Little-bang conception* of the Galaxy, starting from a first informative cell of Planck density was also the death and gravitational Little-bang of a previous Universal singularity, a seed of ultra-dense quarks that transformed its inner, informative cyclic dimensions into an external, bidimensional sheet of dark Entropy:  $M(i)=e/c^2$ . It was the age of the simplex time arrows.

*-Life arrow, steady state:* Then the Galaxy suffered an informative process of reproduction, self-organization and social evolution, the *Little-banging*, or age of the Complex Arrows divided in 3 ages – the atomic, stellar and galactic age, which should end in:

- *Informative, 3rd age:* A Little-crunch back into a new hyper-dense singularity that would restart the cycle in a new Little-bang.

-  $\Delta-1$  (Future): *New Little-bang and Conception.* The future explosion of the hype top quark Hole will again create a bi-dimensional sheet of gravitational space-time where matter will again evolve, as quarks form nucleons that decay into atoms and dark Entropy warps into light, the new components of the future baby Galaxy...

Let us consider those ages and its ternary sub-ages, *according to a law of the fractal paradigm, known as fractal differentiation:*

*'Any event or form of reality can be divided into ternary or dual events and spatial forms of a lower spatial scale or shorter time duration'*

This law structures fractal self-repetitions according to 3 ages and 3 Non-Euclidean structures in any scale. Thus it can be applied to study the 3 ages of the Galaxy and for each age, its 3 sub-ages. Since we have already study the fractal Little-bangs (birth) we shall start with the 3 ages of the Little-banging:

#### 1 Universal Age: Particles, Atoms and Molecules.

- *Birth: Max. T: Fractal Little-bang of Beta decays.*

The Little bangings of primordial particles: After being scattered by a gravitational wave of dark Entropy at  $10c < 100c$  speeds, quarks evolved into nucleons and suffered fractal, expansive quantum Little bangings - beta decays - creating protons and electrons, later self-organized into atoms, molecules and more complex social structures, till giving birth to galaxies.

#### *3 Atomic Ages of matter states:*

Those molecular structures can also be studied with the law of 3 ages, according to which the 3±i states of matter respond to the dominant arrow of future information:

– ( $\Delta-1$ ): *Plasma or conception state of matter.* The plasmatic state occurs at speeds closer to light, in a state in which atoms are split in primordial particles, free protons and electrons, which emit enormous quantities of radiation and sub-particles. Thus plasma is matter in its seminal state, ( $\Delta-1$ ).

– Max. T: The *gaseous* state is the classic *energetic state* of atoms or diatomic molecules with max. movement, spatial volume and min. formal density.

–  $\leq$ : The molecular state of balance between Entropy and information is the *liquid state*, which according to the law of harmony and maximal existential force ( $S=T \max \text{exi}$ ), is *the reproductive state* of matter. For example, liquid water and mercury dilute all other atoms of similar weight that merge and evolve into more

complex carbohydrates & metal forms: carbon-life or metal alloys. 90% of a human body is liquid water, with diluted, energetic gas (oxygen), and solid particles (proteins, DNAs, RNAs) to store and trans-form information. Since solid is:

- Max.S: Solid, informative state of min. movement and max. form & mass density that creates the most perceptive=informative, inorganic structures: crystals.
- ( $\Delta+1$ ): Finally, the super fluid (helium) and boson states (heavier atoms) are the highest form of molecular evolution, because it combines the properties of solids with maximal order, liquids with max. reproductive, combinatory capacity and gases with max. Entropy. Thus, it gives birth, according to the organic, social arrow of Evolution of all systems to a new type of macro-organisms, with a central, hyperbolic nucleus of super fluids and bosons... the:

II Age:  $S \approx T$ : Nebulae, stars and planets.

In the next stage, those states of matter evolved socially aggregating into macromolecular systems that combine 2 states of matter, which act as the dual energetic/ informative elements of the complementary system. Those cosmological, macro-molecular systems seem to us static, because their existential cycles are slow (Max.T=Min It). But they are also evolving in 3 ages:

-Max T=Min S: Youth. Nebulae are the youngest, commonest, biggest (max.T), less dense, simpler (Min.S) physical systems, extended around and between galaxies. Their atoms exist in energetic plasma and gas states.

-  $S \approx T$ : Stars are molecular macro systems, existing in the plasma and liquid states. Complex cosmology considers informative, cold, liquid and super fluid states dominant over energetic states, which Simplex Physics, based in a single Entropy arrow prefers, as Entropy is also easier to detect. Yet if we could reach the center of a star, we will find lower temperatures and super fluid systems. Since it is a basic tenant of Complex physics that informative, hyperbolic systems are more static and cold, able to create order and focusing formal mappings that gauge the external Galaxy.

- Max T=Min S: Planets are systems that exist in liquid and solid states. They follow the Inversion Law, Max. T-> $\infty$ =MinS->0. So giant planets exist in liquid states and smaller planets exist as solids. They are ferromagnetic planets; and we live in one of them. Again, fractal space-time theory favors cold, solid, informative states for those centers. So we affirmed that the planetary core should be a crystal; and their youth should be colder than scientists predicted. Indeed, recently we found that Neptune might have a solid diamond crystal in its center and the Earth probably has an iron crystal with a final Uranium core. And we have also found, studying zircons that planets cooled off much earlier than expected. Hence informative life also started earlier.

-  $\Delta+1$ : Pulsars and Holes are systems with a solid iron crust and a super fluid core of strange quarks.

Pulsars represent the final, informative age of celestial bodies, which might evolve further into Top quark Holes, species belonging to the gravitational Galaxy beyond our light world, with higher form. Those holes become through social evolution the informative, hyperbolic centers of galaxies, triggering the next stage of evolution of the Galaxy:

III Informative, Age and death: Max.S: The age of Galaxies.



-From left to right: A galaxy with a flat star body and a central brain, occupied by Top quark Holes with a hyper-developed dimension of informative height, perpendicular to the galactic body.

*-Different biological curves of stars reproduction.*

*- A region rich in atomic Entropy where those stars are born.*

*-A galaxy with an organic form that remembers a ray fish*

*- A giant galaxy, which re=produces a seminal jet of matter, giving birth to a younger galaxy.*

*The 3rd age of the Galaxy started once galaxies, with central, informative top quark holes and star bodies that feed on interstellar gas socialized in galactic networks with the 3 canonical topologies: Lineal walls, spiraled systems and cyclical, globular forms and disks.*

Those 3 galactic networks structure a mature Galaxy that shows in computerized models a surprising similarity with the discreet networks of a living tissue.

As the Galaxy gets older, if it is a cellular structure it will warp further, creating a *hyper top quark hole* of Max.Informative, Planck's density in its hypothetical center that should become its DNA-like center controlling and feeding in a hyper-vortex of galaxies.

We could consider 2 cellular hypotheses:

$\Delta+1$ : The Galaxy evolves socially as it becomes a cell of a hyper-Galaxy from a bigger  $\Delta$ -scale...

$\Delta-1$ : Each cell is an island Galaxy in itself that will finally collapse around its informative center, as stars do in elliptical galaxies, feeding its Hyper-Top quark Hole in the Little-crunch. Then the Galaxy will die in a new Little-bang will initiate a new cycle. In this case the cell-Galaxy is self-similar to a bacteria, in as much as it is a single cell organism.

We seem to be moving towards the steady state, longer period of existence either because we are atoms-like of a huge Galaxy or because we are in a 2nd age that will latter implode back. Because the degree of curvature of the Galaxy is given by  $\lambda$  which is near equilibrium, counting the implosive action of galaxies, and the expanding intergalactic space, both hypothesis (a gas-like huge Galaxy or a cell-like system are possible).

*The Huge Galaxy will reduce those ages to galactic phases.*

Yet if cells are atoms of a huge Galaxy none of those ages will happen, as galaxies would be the last 'cosmic structure', which we can perceive with certain precision.

In Einstein's general equations of space-time, the cosmological constant that measures the Entropy of vacuum:  $\Lambda$  defines also the warping of the Galaxy, which can acquire our familiar 3 topological forms: a simple plane,-sphere proper of a young age; a cyclical, steady state toroid or a convex, informative form (its Little crunch, final state). Now  $\Lambda$  is positive, and the Galaxy seems to be plane but so close to zero that the hypothesis of a stationary Galaxy takes force. Yet again we cannot measure with enough time latitude to know if it changes and it will *diminish in the future it will become negative, inverting the geometry of the Galaxy and warping it, into a final Little crunch.*

Since ' $\Lambda$ ' can be considered the length of the tachyon string or minimal action of the gravitational Galaxy in terms of those minimal fractal parts, the thesis of a constant  $\lambda$  and steady state huge Galaxy is reinforced by self-similarity with the constancy of ' $\hbar$ ' in the quantum world.

In such case, there should be only quasar-like Little bang of galaxies, short of cosmic beta decays and the 3 ages or solutions of Einstein's equation should be applied only to galactic space and the quasar cycle, initiated by a gravitational, inflationary Little-bang of dark Entropy, followed by a Little-bang of electromagnetic radiation, which quiets down, and finally implodes into gluon creation of quark matter.

Such humbler, more realistic analysis of the origin of the observables of astrophysics will reduce all relativistic analysis of the 3 ages of space-time to processes within the galaxy, born as the explosion of a hyper-black hole

of top quarks, latter exploded into a fractal Little-bang of beta decays. We would then be in the 3rd age of such galaxy, organized already by a central black holes. Since *the space-time of our galaxy is an implosive vortex of information.*

Indeed, we are in a Gödel Island-Galaxy, in a vortex of information called the Milky Away. Then the Energetic Galaxy should be considered irrelevant to us, only applicable to intergalactic, expanding space, because we would exist in the 3rd informative solution, the vortex of the galaxy and that is why the arrow of time in humanity is an informative arrow, not an energetic one. And that is why the sciences of information, of biology not those of Entropy should dominate our analysis of scientific phenomena - even if the awesome Entropy of physical beings might impress the simplex mind.

*Recap.* We can order the evolution of the whole Galaxy as any other organism in time through 3 ages each one divided in sub-ages: the young, energetic Little-bang, probable death of other Galaxy, the steady, reproductive state in which it seems to be now and the Little-crunch that will happen as the initial momentum of the gravitational strings slow down to under c-speed. Then we shall enter into the Gödel's Galaxy in which some regions call galaxies in which we inhabit exist. In those regions information dominates Entropy.

**5D scales of the galaxy: Δ-1: quark families, Δ-cosmic bodies, Δ+1: parts of the galaxy.**

To avoid that fate, cycle after cycle stars and planetary systems evolve in complexity guided by cold central crystals of gravitational perception - the energy of the 'gravitational eyes' of the stars. Mounting evidence that the center of celestial bodies are crystal forms able to hold virtual worlds, explain galaxies as vortex of gravitational perception, that stars follow, feeding and corrugating the space-time in a slow vortex around the central black hole. Yet their fate is sealed, and when they are closer to the center of the Galaxy, despite its erratic movements trying to avoid the black hole [Population II stars, which no longer follow the vortex path], forms are fed-"purified" -devoled- transformed back into extended-pure energy=Space by the black hole who "feeds" on them, and expels perpendicularly [bi-jetting] gravitational space-speed, perceived as dilatation from other Galactic organisms [Hubble effect].

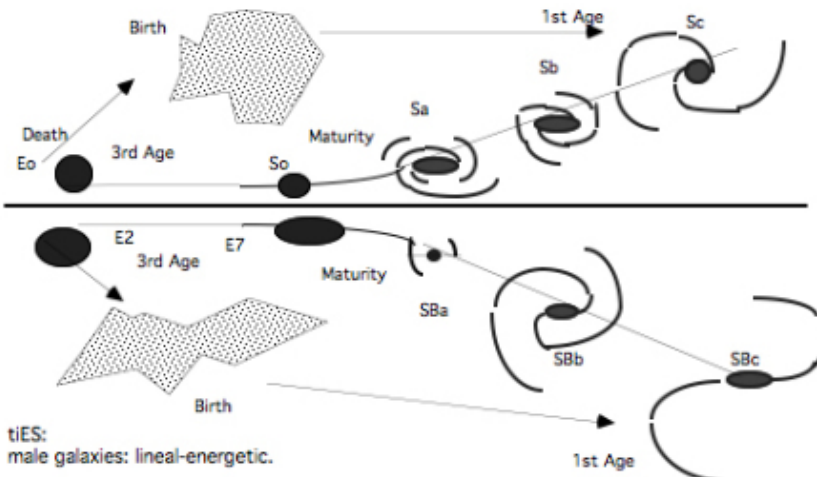
In that way the eternal game of Time-construction and space-destruction maintains a perpetual balance, as far as man perceives. So we talk of galaxies as organisms in which the stars are the white holes, the energy which the black hole, or linguistic, gravitational organism, 'farms'. For that reason survival planets are those who evolve light into gravitational perception, and move freely away. A movement achieved thanks to the magnetic and nucleic perfect geometries of iron crystals, able to modify the trajectory of planets, once their forms

In the 30 years old graph, a mementum of my old self-published books an old gender related duality on the creative processes of galaxies... As usual we remind the 'scholar' that this is a seed – what matters are the *principles my task trying to reorder them, for future 'pros' to enlarge, refine and develop fully the model of the galatom's organisms, anti-atom like particles of a larger fractal but not equal hyper-universal variation.*

The most important ages of galaxies are obviously those of life, but because humind physicists come from ballistics and projected its worldly mind into its theoretical models of lineal time and entropy, they are obsessed by the death of each of those scales,  $E=Mc^2$ , the big-bang of masses, quasar big-bangs and a likely not big bang Universe. So we focus most of the paper on them, as usual from the organic cyclical, Never explained properties, as it would be easy for a 'pro' to reduce its equations to those guidance models, with a higher hierarchy/primacy over the detailed equations – a fundamental law of 5D: 'The larger organic scales and its deep, long time cycles, determine the truth of choice among the smaller detailed analytic mathematical equations'.

**Species of galaxies.**

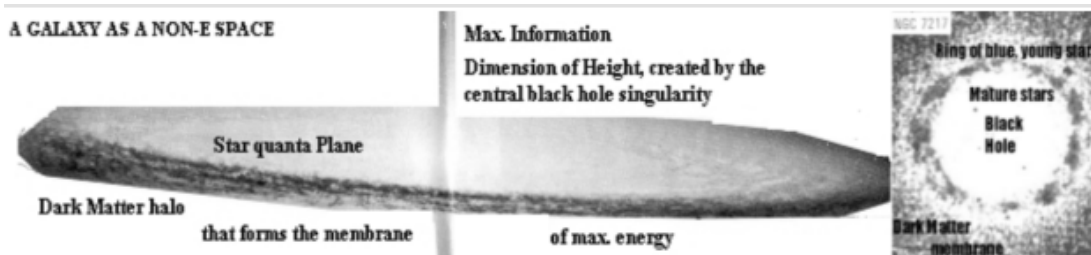
Ties: Female galaxies: cyclical- informative.



## ΔS: ORGANIC GALAXIES. ITS SCALES ITS IN SPACE., TERNARY TOPOLOGIES.

Let us consider the structure of the superorganism of the galaxy, in the same fashion we have studied all other superorganisms of the Universe, using its generator equation; for simplicity in the following order, its spatial 3 parts, its, evolutionary  $3\pm\Delta$  ages, and its S-point, the central black hole of maximal information that connects it as a 'whole' with the upper scale of the 5th dimension, the world of dark matter and energy, beyond it.

Of course, we shall have to correct some errors and anthropomorphic postulates topic of all human sciences, which will make 'scholars' feel offended, but we are not concerned with the theories of the day but the larger truth of the structure of reality. So far, so good, within the Galaxy, we must affirm 'don't worry be happy', humans have done for a change a good job. There is a limit of c-speed, the action of space-time of the galaxy; there is a temporal clock structure, mass, which slows down its time clocks as it grows bigger (even in the minimal scale in which mass is meaningful, that of living superorganisms, so the clocks of smaller masses – rats tick much faster than those of the big elephants).



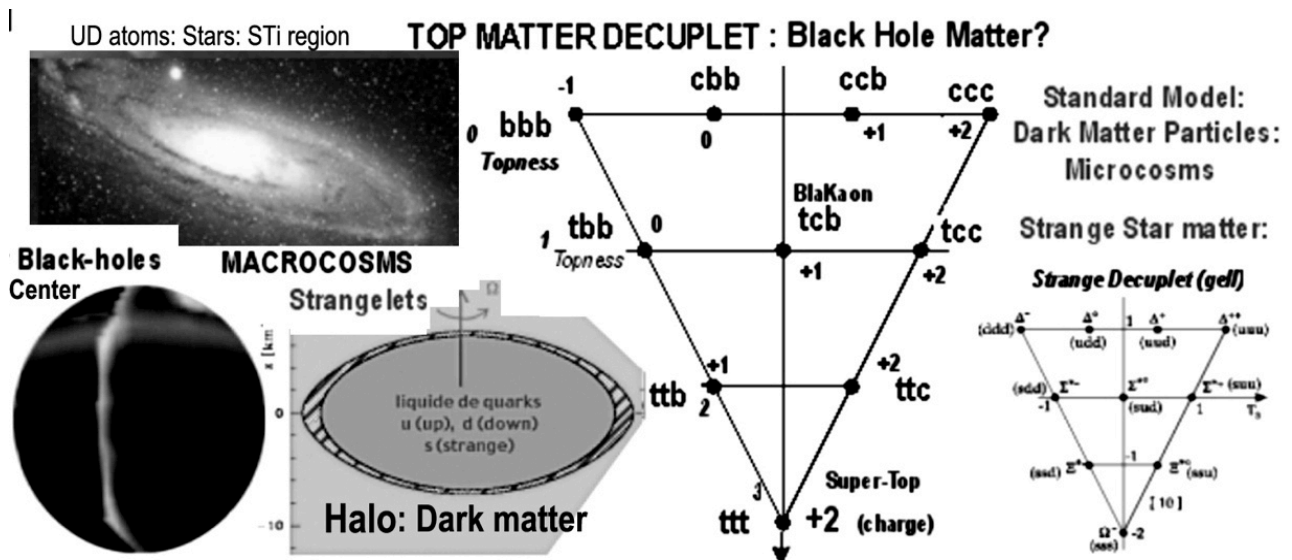
Let us then add vital topology and 5D scales as fractal organic properties to any galaxy, according to the known facts of astrophysics, in which black holes dominate most its creative processes. So we compare by the disomorphism of scale the galaxy to a cell in a much larger scale, with mitochondria stars, of light ud-matter which end up being devoured and becoming the energy for the creation of black holes, the informative vortices, equivalent to the DNA, that swarm in huge numbers in the central nuclei and control its shape and provoke the reproduction of stars, with its in-formative gravitational waves.

DNA invaginates with Golgi conducts vital cytoplasm it exploits, surrounded by the faster membrane of proteins, which act in its formal position as a membrane. The magnetic field surrounds the charge and encloses the vital space of electromagnetic fields the charges controls. So happens with a planet protected by its magnetic field that steams out of the central charge and surrounds it. And the galaxy has in its center a black star.

And it is surrounded by a halo of dense fast rotating strangelet quarks, so the stars and planets within it will become converted into black holes in Nova explosions or strangelets, when nuclear Physicists, programmed to extinguish the species according to the Fermi paradox, busy-busy recreates big bangs on Earth to 'prove' their absurd entropy-only theories of the Universe

Galaxies are super organisms constantly reproducing new stars, in its mitochondria, guided by an informative field, gravitation, dominated by quark-like, strange stars and top quark black holes, forming a symmetry with its lower scales of dark entropy (tachyon, neutrino? beams, that stretch intergalactic space to  $z>c$ ). We can see many of the homologies of the galaxy atom, which at  $\Delta\pm 3$  clearly formed an isomorphism of scale that related them both as mind-singularity (quark top black hole stars) and elements of the 'strangelet-halo of hard proteins' and mitochondrial region of ud, light particles, or atoms, which we inhabit, in the  $\Delta^0\pm 1$  thermodynamic scales.

Kerr rotary black holes would be top quark frozen stars with positive charge and same density at macro-scale than a black hole acting as a relative 'proton' acts in an atom in the center of the galaxy. Once we had the 'solutions' (Kerr black holes), the study of those holes was limited by the c-speed turning event horizons, which 'absorbed' the light of electromagnetic matter after exploding it, and 'digested' it via the weak force, creating heavier particles.



While the halo is made of strangelet quarks (negative charged), acting in this symmetry between the 3 families of mass and 3 regions of the galaxy, as a relative negative 'electron' cover, with the ud-stars and planets in the middle. *In the graph, following Einstein's search for cut off substances for black holes and Witten hypothesis of a halo made of strangelets, the most likely structure of galaxies, according to 5D scalar symmetries and the efficient, economic laws of Nature (Ockham's razor): primordial black hole stars are born exceedingly hot and active, as all 'seminal species' in a lower scale of size, on the Compton wavelength as heavy positive TCB quark atoms, while similar forms made of lighter strange quarks form negative halos of strangelet matter, which become from the point of view of the hyper-universe 'galatoms' with proton-like positive nuclei and electron like strangelet halos.* Einstein asked for a cut-off substance, or 'atom of black holes', which he could not guess at the time as quarks had not been found, but now we hint that black holes are as he thought 'frozen stars' of the heaviest quark families (bct quarks), and that should be the 'realist modeling' of black holes. As bct quarks appear in growing numbers in accelerators, tiny black stars then should be produced on them, in any of its possible varieties of dark matter that range from strangelets (s-quarks) to toplets (TTT-quarks), through its Higgs decay (H=Top + anti top quark).

The previous graph with its ternary elements, the Halo-membrane of maximal extension in space, which leaves energy and information enter through a cyclical space-time region, the plane of stars, towards a center of information, is the fundamental system of the Universe, already described by Descartes, who said all is made of res extensa (space), cyclical vortices of time space and a central point of reference that measures reality or 'mind'. So the galaxy centered in a black hole (and the similar atom with its electronic cover, centered nucleus of mass, and intermediate space-time where forces of gravitation and electromagnetism are constantly exchanged) we have just described logically IS not only the fundamental particle of physics, but isomorphic to any biological, social system – the key to the unification and understanding of the Universe, as a whole and all its parts, self-centered entities of time-space that put together create the puzzle of the Universe.

**RECAP.** We have seen for starters that a galaxy has the same  $\Delta ST$  properties of any system of the Universe. We have analyzed briefly the hilomorphic relationship between its 3 topologic parts, the halo, the central black hole swarm and the intermediate light matter vital energy, and its organic roles similar to those of a cell, and its  $\Delta-1$  parts of quarks that compose them in a symmetry between the 3 families of mass and the 3 parts of the galaxy. We have also introduced the scalar big-bangs of matter in all its planes. And so galaxies are  $\Delta ST$  organisms.

So we can define without further ado the structure of galaxies in space:

**The 3 Non-Euclidean Regions of the Galaxy. : T (Halo)<ST: stars >S: black star.**

Let us now consider the ternary topology of the equivalent 'entity' to the atom in the gravitational membrane – the galaxy. Thus the generator equation of the galaxy as a Fractal  $\Delta$ -point is:

$$E: Halo <stars that evolve Entropy into matter> S (Black holes)$$

In the graph, a galaxy is a curved, fractal space-time of huge spatial proportions, hence minimal form (inversion of properties between Spatial Extension and temporal information). Thus galaxies can also be studied in space as a fractal point with 3 regions that correspond to the 3 'canonical' topologies of a 4-dimensional world - an informative center, an energetic membrane, and the reproductive intermediate zone:

- Max. S: The center of the galaxy is a swarm of black holes, its densest informative masses, which produces the gravitational, informative waves that control the position of its body of stars. Beyond its event horizon, the accelerated vortex of mass of the black hole (Equivalence Principle) should accelerate light, deflecting it into a perpendicular, hyperbolic, informative dimension of height (Kerr superluminal, central singularity) ejecting it as gravitational jets of dark Entropy at 10 C.

For that reason Kerr black holes<sup>10</sup> should be called top quark stars, because they absorb light but let it escape through its axis as dark, gravitational Entropy, at faster than light speeds.

-Max. T: The external membrane that limits the inner space-time of the galaxy is a spherical halo of dark matter, probably made of strangelets or micro black holes, which can deviate unwanted radiation by gravitational red shift and/or absorb the Entropy of radiant matter, cooling it down to the 2.7 K background radiation.

Thus those non-evaporating micro black holes and strangelets of great density act as 'proteins' do in cells, controlling the inner movement of galaxies and the outer absorption of light-Entropy.

- S=T: Stars, tracing toroid cycles form the inner space-time body of the galaxy, a bidimensional plane or Klein's disk that feeds the top quark star and reproduces atomic substances and stars. They ultimately evolve into black holes, which migrate toward the central swarm of holes, residing in the nucleus. In any Klein disk distance is measured as motion and becomes infinite when we cannot reach a limit or barrier (for example the barrier of light speed becomes an infinite Lorentz Transformation). So it happens with the border of the galaxy.

We are part of that intermediate space-time in a Milky Way, limited by its central hole and an invisible border of dark matter, neither of which we can cross without dying; since the speed of rotation of matter around the top quark star and the flows of intergalactic dark Entropy that expands space at light speeds beyond the halo *would destroy us*. Thus we are trapped in this star and planet, in a toroid cycle that will end evolving the Sun into dark matter.

In the image, the structure of the galaxy: stars are created in the intermediate region and the center is occupied by a black star.

The energetic medium that transfers Entropy to the fractal quanta of the galaxy is the external interstellar gas. Finally the system is joined by 2 networks of forces: the gravitational, faster, non-local informative, transversal gravitational waves at the cosmological scale; and the energetic, smaller, slower electromagnetic waves at the quantum scale.

Let us study the parts of the whole - the 3 elements of galaxies, stars, black holes and gravitational forces that join them.

*Recap.* Galaxies are fractal  $\Delta$ -points with 3 standard topological regions: a spatial body of stars and an informative nucleus of black holes. The closest self-similarity in our world is with a cell.

NOW, THE STUDY of those galaxies in time follows a closer symmetry to that of the galaxy in space:

So the little bang, was the death of the previous galaxy, or according to the quasar cycle of barred galaxies (and ours is a barred one), a 20 billion years cycle of birth and death of galactic systems, in which the central black hole suffers a cosmic collapse of all its matter, and then spits it out in a quasar explosion, starting a new cycle:

*Spatial symmetry: T: Neutrino & Light background < St-ars > Black Matter*

## STARS: THE MITHOCONDRIA.

### ST-body: stars. Time Ages

The purpose of astrophysics is to study the superorganism of the galaxy, its generator equation and its symmetries of space-time, as physics is concerned with the  $\Delta$ -2 superorganism of atoms, its  $\Delta$ -3 parts (particles) and chemistry in its  $\Delta$ -2 societies: molecules. Let us then do a fast survey of the galatom's parts, starting from its vital enclosed space of 'entropic energy' that feeds as in all organisms the reproduction of its dominant parts, the membrain of 'strangelet' dense matter akin to the electron of its similar atom, and the center top quark hole, akin to the proton, and with similar quantitative metrics. So the purpose of stars and planets seems to be to reproduce this coding center of top quark holes and protein-like harder halo, as the purpose of cytoplasm is to reproduce DNA and proteins.

This seems also to be the destiny of our planet, but in the meantime we can enjoy the view. Thus in the  $\Delta$ -1 scale of parts of the galaxy, stars do live also as supørganisms tracing their worldcycle, till the 'chosen' become top quark stars, and those who humbly stay quiet, last much longer as red stars, whose life could be of trillion of years, like the similar photons of our smallish infrauniverses.

Of course, astrophysicists do study those  $3\pm j$  ages of stars and plot all its variations in the so called...

### H-R diagram. Ages and Evolution of Stars:

In the next graphs, the Time-space symmetries of stars, along its relative 'S' and T parameters of spectral type (frequency-form) and spatial size.

They form a lineal function except in the Lorentzian limiting regions, inn which stars will both collapse into a big-bang that will dissociate its parts, Max.  $T \times S$ , but also give birth to a more evolved Max. S being, which in the case of neutron and black hole stars will imply an evolution from the  $\Delta$ -thermodynamic scale of ud-quarks into the gravitational scales in 0 temperatures of black holes and neutrons stars

In that regard the life of Stars and its organic form have a simple a(nti)symmetric equation in time and space:

Time ages:  $\Delta+2$ : T: Gas Nebulae  $\geq$  ST: H-R sequence  $\geq$  Dwarf, Pulsar or hole

Space topology:  $\Delta+2$ : T: Photosphere  $\leq$  ST: Radiation zone  $\geq$  S: Nuclei

### Flowchart of Stellar Evolution

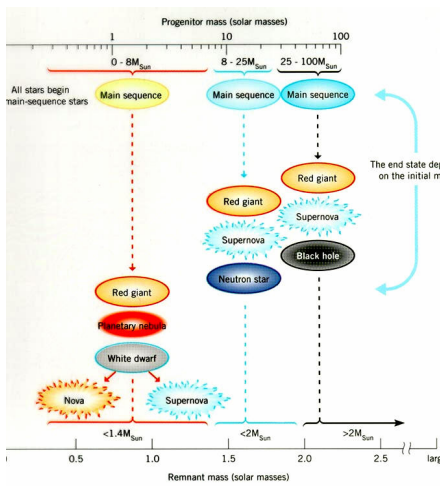
All stars follow the same basic series of steps in the lives. Low-mass stars go through a red giant phase which ultimately turns into a planetary nebula with a white dwarf in the center. High-mass stars go through a red supergiant phase which ultimately results in a supernova, leaving behind either a neutron star or a black star. The deciding factor in the fate of a star is its mass. Stars whose core is less than 1.4 solar masses (the Chandrasekhar limit) will leave behind a white dwarf, the size of which is inversely related to its mass.

The initial mass of this star is much greater than its core, but much of the mass is lost once the planetary nebula separates from the core. Stars whose core is in the range 1.4-3 solar masses will leave behind a neutron star (much denser than a white dwarf). Note that the initial mass of this star is much greater than its core, but much of the mass is lost during the supernova phase. Above 3 solar masses (the Tolman-Oppenheimer-Volkoff limit), a quark star might be created, although this is currently mostly conjecture. Any stellar core over 5 solar masses will inevitably succumb to gravitational collapse, producing a black hole (much denser than a neutron star).

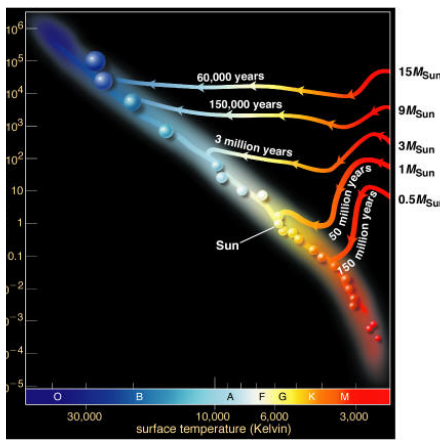
### Nova

If a white dwarf has a close binary companion, the white dwarf may accrete gas from the companion's outer atmosphere. The gravitational energy released by the captured gas may be sufficiently great to start a fusion reaction on the surface of the white dwarf. This flare-up is known as a nova. A nova can recur many times, is

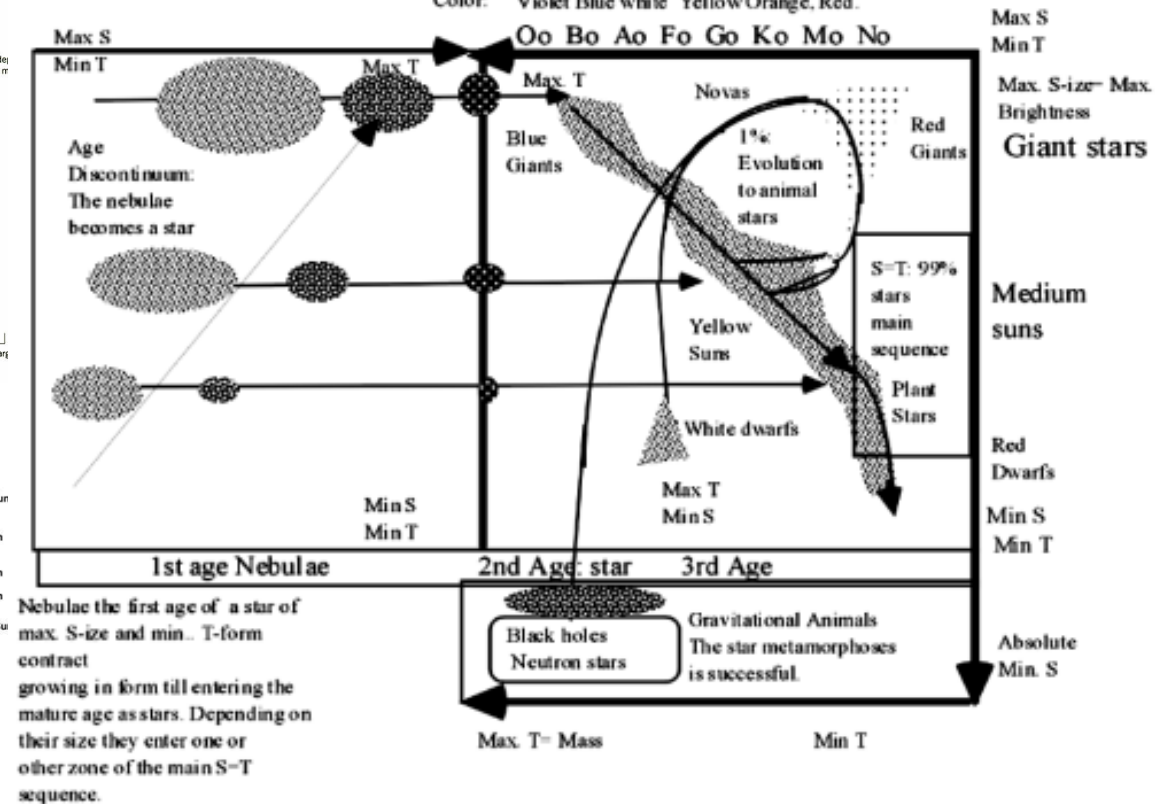




about 100,000 solar



**THE H-R DYAGRAM AS A WAVE OF EXISTENCE AND EVOLUTION OF STARS:**



luminosities. fades after a few months (sometimes years). is more common than supernovas (2-3/yr observed, about 200 so far).

In the graph, the balance between the central zero-point of 'gravity' and the ST-pressure of radiation.

5D Asymmetry:  $\sum \alpha - 1$ : plasma particles  $> \prod \beta$ : Stars  $> \Delta + 1$ : Galaxy

As in the case of other  $\alpha$ -species we shall study here its main features, according to the linguistic-isomorphic method starting from the subjective errors of human perception.

As usual humans perceive better the time ages and worldcycle of any species by observing them in space in different states of their time cycle. This is the case of stars and it is called the H-r Diagram, which therefore will be the first symmetry studied here.

The symmetry of its 5D planes is also well known as stars are the factory that reproduces atoms of the intermediate space-time of the galaxy (our ud-matter world) and finally when they die produce both strangelet (pulsar stars) and black holes (huge stars with enough mass to collapse into a reversed particle reaction till creating a op quark star). So the biggest uncertainty of stars happens in the analysis of its central S-nucleus.

Stars in that sense can only be observed externally and from the external phenomena (granules, magnetic fields gravitational forces) to deduce some of its internal properties. 5D physics allow us to model further the internal S-center of stars and consider likely the main error of star analysis, the lack of understanding of its internal structure, which as all S elements, should be highly informative, hence cold. Thus the center of the star must be NOT as hot as the membrane but much colder.

This realization we adventured decades ago for planets, and it was latter proved (planets have solid crystal cores). And it should be proved for stars, whose center should be made of super fluid helium and hydrogen, and likely be able to produce cold fusion (as all thermodynamic processes must have an asymmetric duality between cold processes made in slow time, with minimal energy (min. T x Max. S) and hot processes made in fast time with maximal energy (Max. T x min. S), in a clear symmetry with the processes of conception (slow informative birth) and death (fast entropic destruction).

So we shall when completed deal with all those symmetries in the aforementioned order.

*The H-R diagram shows the 3 ages of stars, through its Entropy & information parameters.*

The life, evolution and death of stars are depicted in the H-R Diagram, which classifies stars according to its E & O parameters, as the atomic table does with atoms:

*Max. T: Brightness or Magnitude, which is a spatial parameter that grows with the size of the star.*

*Max. S: Spectral type, (color or frequency), which classifies stars according to its temporal form.*

Yet the H-R diagram is only a representation of the 2nd and 3rd ages of stars - since the young age of the star as nebulae of max. Spatial extension and min. formal complexity (as all young ages are) is not represented. So we add on the left side the 1st age of a star as *a nebulae of max.extension*. Then the H-R graph shows the 3 ages of stars and the main isomorphisms of T x S cycles applied to them:

- ( $\Delta+1$ ): Most stars are born as spatial nebulae of max. extension.
- Max. T: Then they implode into blue giants of max. Entropy.
- $S \approx T$ : They reduce its size and grow in atomic complexity through a mature, yellow age of balance between their T and S parameters. The sun is now in that balanced age...
- Max. S: They collapse in a 3rd age of slow decline as its I X E parameters diminish toward its death, becoming white dwarfs.

$\Delta+1$ : Or they evolve in a loop of growing I X E force (top right graph), mutating into a Top quark Hole.

From those elements it is easy to enunciate the main events of the time symmetry of stars:

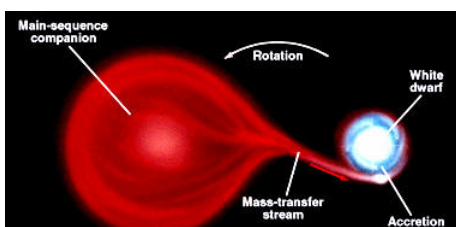
*Recap.* The H-R graph shows also the process of evolution of stars into Top quark Holes, which can be explained both mathematically and organically, based in the self-similarity of all space-time species.

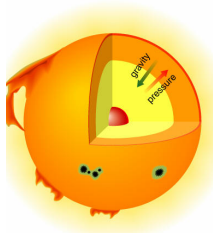
### Star birth

Stars are born from a nebula (cloud) of gas (hydrogen, helium, and a little bit of everything else) and dust. One such nebula, often studied, is the Orion Nebula. If the nebula is dense enough, it will eventually start collapsing under the influence of its own gravity. As the nebula contracts, it heats up and the rising core temperature and pressure eventually causes hydrogen to fuse. At that point, a star is born. For stars to be able to sustain nuclear fusion, their mass must be at least 0.08 times our Sun's mass, which is equivalent to about 80 Jupiters.

Stars cannot be more massive than about 150 times our Sun because they simply produce too much energy and become unstable at that point. (Note that several stars more massive than 150 times the Sun have been discovered, but these are extremely rare.) When the gravitational tendency to collapse is balanced by the tendency to expand due to the heat generated by nuclear fusion, the star is said to be in hydrostatic equilibrium. At that point, the star is on the main sequence of the HR diagram. The newborn star will have a luminosity and surface temperature now that will change very little over the course of its lifetime on the main sequence.

### Death of low-mass stars





Low-mass stars are those that end up as white dwarfs. High-mass stars are those that end their lives in a supernova. Our Sun is an example of a low-mass star; Betelgeuse is an example of a high-mass star. Stars with masses  $0.08M < M < 10M$  (which is the majority of them) live quietly and contently, not changing much, for several billion years on the main sequence.

A star begins to die once it converts all the hydrogen in the core into helium. As hydrogen is used up in the inner and hottest part of the core, the relatively inert helium-rich (hydrogen-depleted) core begins to collapse, and in so doing releases gravitational energy. This energy quickly heats up the outer hydrogen-rich layers and ignites the fusion of hydrogen in a thin shell immediately surrounding the hydrogen-depleted core. As this process continues, the hydrogen-fusing shell migrates outward and heats up the envelope of the star, which then causes the whole star to expand into a Red Giant.

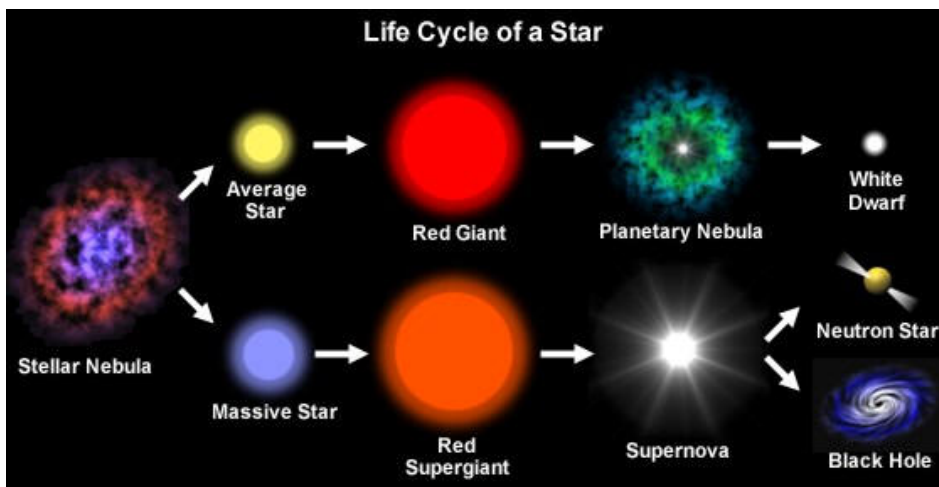
For the lowest-mass stars, core pressure and temperature are not sufficiently high to ignite nuclear fusion of helium. The core then cools while the outer envelope continues to expand. Ultimately, the helium core forms a hot but cooling corpse known as a white dwarf, surrounded by an expanding outer envelope of hydrogen and helium known as the planetary nebula.

The Helix Nebula (also known as NGC 7293) is one of the closest planetary nebulae to Earth (650 light-years away). It is often referred to as the Eye of God on the Internet.

The Helix Nebula is an example of a planetary nebula created at the end of the life of a Sun-like star.

Somewhat higher-mass stars will fuse helium into carbon for a while to produce a denser core composed of carbon "ash" in the center, surrounded by a shell of burning helium, surrounded by a shell of burning hydrogen, which is surrounded by an envelope of inactive (no burning) hydrogen and helium. If the star has even more mass and thus a denser and hotter core, carbon will start to fuse to produce even heavier elements in the center. Another shell of hydrogen burning will form, and beneath it a shell of helium burning.

### Death of high-mass stars



In graph we consider the 3 sub-species of stars, the ud, light stars, Strange pulsars (neutron stars) and top quark stars (black holes). The natural evolution of a Given Max T x S function define when the collapse of enough matter can create an w2 x r 3 mass system with enough density of mass to accelerate its time clock beyond c-speed in top quark black holes:

High-mass stars have relatively short main-sequence lives: Max. T =Min. S.

High-mass stars have relatively short main-sequence lives: Max. T =Min. S. A 15M star, for example, lives for only about 10 million years before turning into a Red Giant. And in its death, they reverse their function into the maximal informative element of the Universe, the black star. When the star first runs out of hydrogen to fuse in its core it will behave similarly to lower mass red giants. It will first begin fusion of hydrogen in a shell around the core and the core will heat and fuse helium into carbon. There will also be carbon and helium fusion into

oxygen. The star's envelope also bloats out to very large sizes (Supergiants). The supergiant's core will fuse very heavy elements from carbon and oxygen all the way up to Iron.

Elements heavier than iron cannot be used as a source of energy through fusion. They can, however, be split into lighter elements to release energy, but this process (fission) does not occur in stars. The star takes on an onion-like structure, with shells of different elements fusing into heavier elements, in progressively shorter phases.

For 20-Sun star, hydrogen is exhausted in the core within a few million years and iron develops within about a day (see table below). Ultimately, when the star exhausts its supply of elements in the core lighter than iron, the core collapses in an extremely violent event known as a supernova. The supernova leaves behind either a neutron star or, in the case of the heaviest stars, a black star.

**Density/size comparison of white dwarfs, neutron stars, and black holes**

A white dwarf consists essentially of tightly packed atoms which constitute the core of a Sun-like star. The white dwarf of a Sun-like star is about 100 times denser than the Sun. A teaspoon of white dwarf material would weigh about 15 tons. The typical white dwarf is roughly the size of the Earth. A neutron star is essentially the core of a star collapsed into a ball of tightly packed nuclei. A neutron star is over a thousand times denser than a white dwarf. A teaspoon of neutron star material would weigh about 4 billion tons. A typical neutron star is roughly the size of a city.

A black hole is the collapsed core of a star so densely packed that it has virtually no size. The infinitely small volume into which all the matter in a black hole is compressed is called the central singularity. The imaginary sphere that measures how close to the singularity you can safely get is called the event horizon. Once you have passed the event horizon, it becomes impossible to escape: you will be drawn in by the black hole's gravitational pull and squashed into the singularity. The size of the event horizon (called the Schwarzschild radius) is proportional to the mass of the black star.

Astronomers have found black holes with event horizons ranging from 6 miles to the size of our solar system, although event horizons can, in principle, be bigger or smaller than this. But in principle, black holes can exist with even smaller or larger horizons. Any object compressed sufficiently can be turned into a black star. The Schwarzschild radius for this object is directly related to the mass of the object. For example, the Schwarzschild radius of the Earth is about the size of a marble (if the Earth could somehow be compressed to this size).

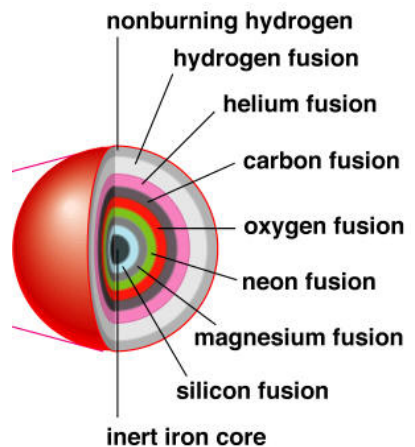
**Space symmetry: Internal structure of stars.**

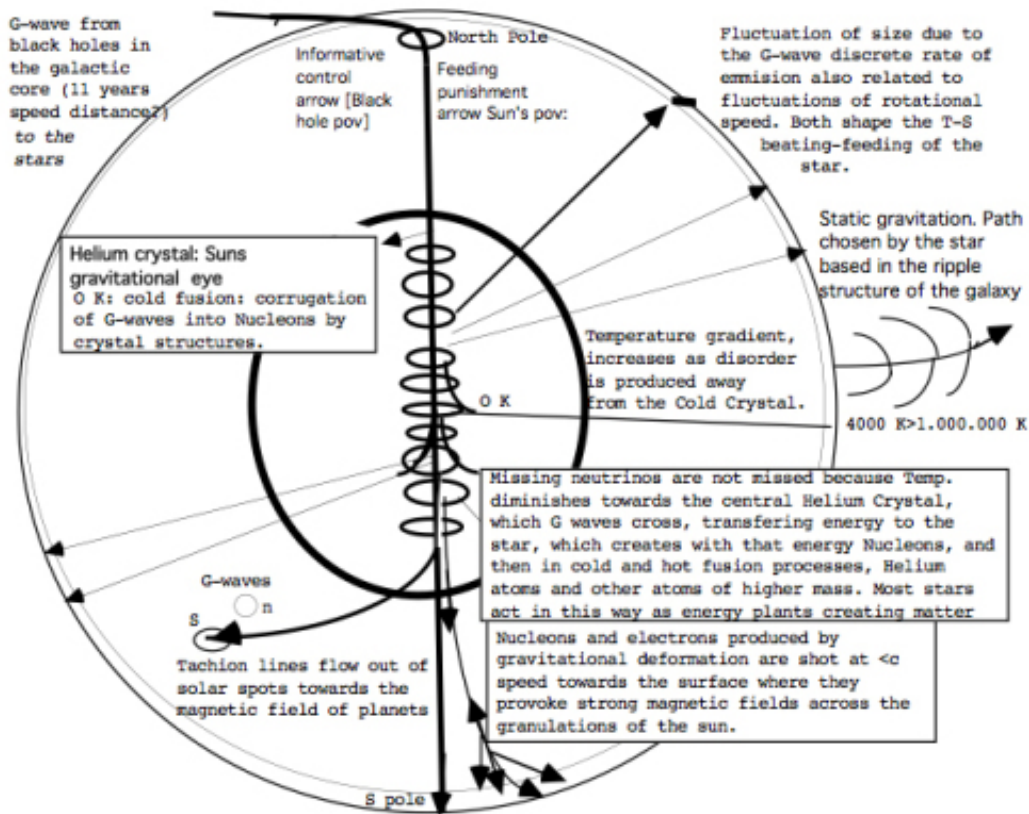
Stars have an  $\Delta St$  symmetry equation:

Space Symmetry:  $\Delta+2$ : T: Photosphere  $\leq$  ST: Radiation zone  $\geq$  S: Nuclei

5D Asymmetry:  $\sum \alpha-1$ : plasma particles  $> \prod \epsilon$ : Stars  $> \Delta+1$ : Galaxy

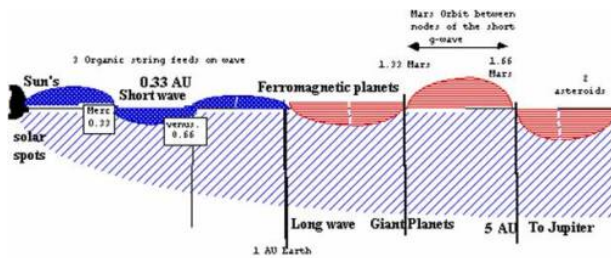
In the graph, the structure of the stars, which should have a central, liquid super fluid Helium vortex, and be able to reproduce cold fusion processes, according to the dualities of time-coldness, and space-heat.





In the graph, the most likely huge error in the modeling of stars should reside in the lack of organic structure and excessive temperature of the different regions of the system, as all what matters to physicists is the concept of energy-entropy. Thus the model considers the star a mere furnace of the different nuclear reactions but besides those models the star, the 'plant-like' system of the galaxy or 'mitochondria' should have other complex structures. Essential to them should be the gravitomagnetic systems that connect the star with the black hole, hinted at the e4qual 11 years cycle of black holes activity in saggitarius and dark spots activity with its cold magnetic fluxes. Given the likely relationship between neutrinos and the background space-time of gravitation different amounts of them might be produced. Of great interest also should be the final connection between those G-waves and the planets, which seem to be placed in its nodal points (Titus law):

**Interstellar and inter galactic transversal D-waves = Electromagnetic waves.**



We give the general name of D-waves to Dark cosmic electromagnetism, likely related to faster than light (outside the galaxy) Neutrino waves of dark energy=entropy, to the cosmic >c transversal waves between galaxy-atoms (ab. Galatoms); moving at light speed when constrained by the galaxy's light space-time background and inner gravitational forces

If made of entangled neutrinos they 'warp' reproducing light when entering the galaxy (Broglie's theory of neutrino light), as particles entangle in the lower > c 5D scale of quantum potential (Bohm's quantum realism). While they are emitted by galactic black holes in their massive reactions that create heavier quark particles, as jets of dark entropy, unconstrained and escaping back into the dark entropy lower scale of action at distance and null information -for our electronic perceivers of intergalactic scale.

Do D-waves exist within the galaxy? Likely as a quantum potential below and above the range of Ξ-interactions between normal matter. As it happens in atoms where Ξ-radiation has a very different behavior in dense gamma rays between electrons and protons, D-waves should on the interstellar level be considered rather transversal gravitational waves; which are useful to model interactions and distances between stars turning around the

central black hole, hold by the outer strangelet membrane. So astrophysicists use it as tidal waves to model the shape of those galaxies. On that path a deduction of the 5D model, in the graph, is its use at different frequencies, maybe associated to the 3 type of neutrino waves, to calculate the Titus law of distances between planets with 2 waves of different frequency/energy, shorter for ferromagnetic planets than H-He ones, all of them sitting in their reinforced nodal points. In any case we are just highlighting with big strokes a field that will engage professional astrophysicists for decades to come if they get to abandon their  $\Delta$ Entropic models of a single lineal time for everything that exists and then some – so all forces are modeled as a lineal exchange of particles; all births of cosmic structures from evaporating black holes to cosmic big-bangs with entropic time arrows, etc. Yet those entropic ‘arrows’ are just the final, last Dimotion of death of any T.œ of the Universe and as such they should be demoted in its importance in astrophysical studies at any scale of reality. As it is absurd to reduce the enormous beauty of the Galaxy and its cosmic bodies to the study of its death; akin to reduce the study of biological organisms to corpses. Forensics IS a very small branch of astrophysics. Let us then apply within the range of the known, hence scientific, experimental scales we perceive with enough detail to make serious science, the Pentalogic method to the galaxy, which we just have done in space, studying its scalar and spatial superorganisms, now in time, studying its life ages, of which the ‘little big-bang death’ is just its quasar collapse.

### **BLACK HOLES: TOP QUARK STARS: S: GALACTIC VORTICES**

#### **$\Delta$ -1: particle scale: strangelets and toplets.**

Hylomorphism – the existence of an  $\Delta$ -1 space-time  $\Sigma T.$ œs for all  $\Delta^p$  beings, supersedes ‘mathematical creationism’, hence it requires black holes and strange stars be made of a smaller parts, which can only be heavy quarks, whose function is precisely to be the parts of its larger scales:

Black holes respond to the ternary symmetry between the 3 families of  $\Delta$ -1 quarks and the 3 vital topological  $\Delta$ +1 parts of the galaxy studied previously:

$\Delta$ +1: top quarks- $\rightarrow$ To: Galactic black holes,  $\Delta$ -strange quark: Sœ: galactic halo,  $\Delta$ -1: Ud quarks (our matter): ST-galactic stars.

Now, in this system, it is necessary to understand the role of the Higgs field and top quarks, which conform the outside-the-galaxy dark matter and dark energy.

#### **Black holes are Kerr top quark stars and frozen stars.**

*Quark holes can be studied, once we understand their ‘higher why’, from the perspective of topological spaces and multiple space times, which limit is possible species and processes, either as top quark stars (frozen stars in the jargon of Einstein), or as rotational masses with the Kerr Metric; or from the many perspectives, of its structure as a system co-existing within 3 relative  $\Delta$ -planes of existence. In the graph, its 3 topological regions.*

Any organism extends through 3 hierarchical scales. For example, a human organism is composed of cells and carbohydrate molecules whose minimal unit is the amino acid. In the Galaxy there are 3 scales of mass and each of those 3 scales become the fractal parts of the next scale. In each of them we find an informative, cyclical type of mass: quarks in quantum atoms; black holes, which should be top quark stars in star-size black holes; and swarms of black holes in hyper-black holes at the center of galaxies and perhaps the Galaxy.

Thus a hierarchical organic structure grows from those inner parts: its strings become gluons that become quarks that become black holes that form hyper-black holes, in a stair of fractal systems of increasing complexity.

This is proved by the fact that the Black star’s event horizon membrane reduces light to its minimal bits of information (Planck’s areas), whose length is the minimal length of strings, which they *extract from light*. Since strings are both the theoretical components of black holes and strong forces, quarks and gluons, a description of black holes with tachyon, boson strings becomes the mathematical bridge between both scales. Thus indeed,

black holes are fractals of quarks, fractals of gluons and strings (mind the reader though that those strings have fractal dimensions, are background independent, tachyon strings, defined by the Nambu's actions, not superstrings, a baroque fantasy of Pythagorean Physics).

Each of those scales becomes the informative center that interacts with a reproductive body of electromagnetic electrons, stars and galaxies. Let us then study black holes in their interaction with its bodies, galaxies that explode in its big-bang death as quasars.

S regulate that body black holes emit dark Entropy through its poles, creating the membrane of gravitation that 'positions' stars, as protons position with their gravitational and magnetic fields the electronic nebulae. Since gravitational Space-time is formed by the maximal informative entities of the 2 scales, protons and black holes. For all those reasons, we prefer the names:

-Frozen stars (Einstein's name), since they are top quark stars.

-Kerr's holes; since this is the rotational metric or black holes.

-Or top quark stars, because it expresses the fact that the black hole is a door to the other 'world' of dark Entropy, which it emits. While the name black hole, invented by Wheeler, to substitute Einstein's name after his death and push in this manner his singularity theory, implies nothing is emitted by the hole.

In that regard, science when it is built to respond *all* the questions that exhaust the truth of the system, the what (experimental evidence), the who or how (causal logic), the when (metric spaces) and the why (topological time arrows) *has also an inverse hierarchy of truth*: Once we determine *what* we want to study, we must observe its *why and how* – its topological structure and causal logic combined (how/who) - and only then enter into the details, analyzing with clocks and instruments of science, its metric properties.

The excessive use of machines of measure, overdeveloped by the Industrial R=evolution has obscured that hierarchy, which limits with the *experimental what*, and the *why and how of topological time arrows*, what things are certain and what are just mathematical fantasies of 'baroque artists' of metric spaces, which are so common in the study of black holes due to the lack of experimental evidence on its details. Let us then study reality as it is, not as 'Touring machine' resolves it with an excess of metric information that ignores the deepest why and necessary isomorphisms of the why-Galaxy.

#### Frozen top quark stars.

Frozen stars are similar to nucleons: huge condensates of top quark-mass that create vortices of gravitational information with a negative curvature in the dimension of height. Hence, they exist in a discontinuous gravitational Galaxy beyond the c-speed and 0 K limits of Entropy and information of our Galaxy, emitting and absorbing dark Entropy at higher than light speeds and ultra-cold dark matter, perfectly ordered, probably under 0 Kelvin.

In that regard, the closest species to a frozen top quark star is a neutron star, composed of super fluid neutrons and strange liquid in a boson state, occupying a minimal space. The difference of density between a neutron star and a Top quark is small. So a Frozen top quark star could be the next evolution of a strange quark star with a 'lighter' cover of strange quarks on the event horizon, 'breaking=killing' the symmetry of our matter, packed then in a boson, super fluid solid state of bcb atoms and top quarks. Since the sum of the transitional weak bosons, Z and W equals that of a top quark. Thus:  $\Delta+p=Z+W=Top\ quark$ .

#### The 2 poles of the top quark star.

Thus the main error about Top quark Holes is the idea that since we do not see them emitting Entropy and matter-information at lower than c speeds, nothing escapes a Top quark Hole. This is a theoretical absurdity (things don't 'disappear'), which now has empirical proofs of falsity. Since we observe vortices of mass and

radiation that surround Top quark Holes, reaching super luminal speeds before dying into pure gravitational Entropy according to the Lorentz transformations.

And we observe bursts of matter and radiation coming out of the poles of central Top quark Holes in quasars at super luminal speeds. So Top quark Holes do emit dark Entropy and information at super luminal speeds through its 'axis', as atomic nuclei emit magnetic fields in their rotation.

The Relativistic equations of Top quark Holes show that duality since Top quark Holes appear with 2 solutions: one with implosive, informative parameters and the other with explosive, energetic parameters. Thus according to those equations a Top quark Hole 're-absorbs' radiant matter and light, dissociating the photonic particle-state and wave state of light, hence 'killing it'. both beyond their Lorentzian limits of c-speed, back into its ultimate components: photons evolve into electronic nebulae, and then collapse further into quarks, which become part of the Top quark Hole body or are ejected as quark beams; while light reaches infinite red shift and becomes dark Entropy.

Because the parameters of density of a stable black hole are self-similar to those of a top quark star, and that is the limit of density of mass in the Galaxy, it is easy to infer that black holes have in its center a super-fluid vortex of top quark stars; and so we can consider dark Entropy to be the 'gravitomagnetic field' of those top quark stars.

As in the case of the 3 solutions of Einstein's space-time, which correspond to the 3 ages of the Galaxy but physicists dissociate in 3 different Galaxies in space; physicists have deduced that those 2 solutions to the Top quark Hole equations create 2 different type of 'black and white holes'; when according to space-time duality they represent the 2 organic regions of the same gravitational hole. Hence we could call Top quark Holes also 'mulatto' holes (-). Though we will use the term *top quark star*, more familiar to cosmologists. And define its  $E \leq 0$  Generator equation:

*Top quark Hole (max.T: external membrane: event Horizon) <Wormhole> White hole (Max.S: Kerr ring)*

Quantum cosmologists never discovered white holes as independent entities, because they are part of the top quark star.

#### Topological regions of a top quark black stars.

Unfortunately quantum cosmologists ignore the inner structure of a gravitational hole as a fractal point with 3 zones that explain them:

- *Max. T: The event horizon* at c-speed is the energetic Riemann membrane that absorbs radiant matter, breaking it into its minimal units, 'Planck's areas' that become the strings of dark Entropy that feed the hole.
- *S≈T: The intermediate zone* transforms radiant particles and Entropy into quarks and dark flows of gravitational Entropy. It seems to be a super fluid solid: a vortex-like structure of quark condensates and gluons.
- *Max.S: The central region around the polar axis* or central, informative, hyperbolic, negatively curved nucleus.

That informative center is the final 'eye' of the gravitational hurricane, the white hole of the top quark star. It emits through its poles Entropy and information in the form of dark, quark matter and gravitational waves of dark Entropy in super luminal jets that we observe indirectly around far away quasars, as they become again slower radiant matter, creating irregular galaxies. Thus white holes are the poles of top quark stars, which indeed are the doors to the gravitational world of dark Entropy and quark matter that dominates the Galaxy, as cosmologists have discovered.

The equations of a top quark star show how it transforms the spatial, energetic parameters of the electromagnetic world into the inverse, informative parameters of the gravitational world, since a top quark star is an ultra-dense mass of highly ordered 'boson nucleons', packed into a single point of space...



Continuous physicists used to believe that the accelerating vortex reached infinite Entropy values in the central point or singularity, since they do not model masses, charges and Top quark Holes as physical vortices of mass with a Radius,  $R_0$ , that represents the discontinuous limit between the external, body cycles of the Non E-point and its inner, still, informative region or brain, in this case between the vortex of stars and the still Top quark Hole brain. Yet because infinities cannot be calculated they renormalize their equations beyond a certain limit in which they postulate 0 charge or 0 mass.

In fractal cosmology those tricks are not required as top quark stars are modeled with Non-Euclidean topologies, which have always 3 regions separated by asymptotic membranes.

Thus fractal theory solves the problem caused by continuous infinite singularities, as Planck solved the problem of continuous, infinite temperatures, when he introduced fractal light quanta.

In organic terms, beyond the event horizon of a Non-Euclidean point, the Klein disk starts and beyond  $R_0$ , a discontinuous, inner radius separates the body from the informative, still brain.

In the galaxy the event horizon is the halo and this final radius is the horizon of the top quark star. In the atom, those 2 horizons are the external Electronic radius and the inner Bohr Radius, beyond which we find the proton Top quark Hole.

The same pattern of 3 regions is found in a Top quark Hole as a Non-Euclidean point. The event horizon is the external membrane. Then the point in which the equations of a Top quark Hole reach  $T=0$  is the inner  $R_0$  radius.

(This is the point in which Hawking says Top quark Holes become negative in time and convert themselves into time machines)-: We already argued Mr. Hawking's confusion of physical time, a change in the direction of motion,  $v=s/t$ , and absolute time, a hyperbolic error of the Cartesian graph. Time in physics is change in the direction of motion. So what  $T=0$  means in a Top quark Hole is that we reach the region in which the cycles of the Top quark Hole's body end and we enter the hyperbolic, high central tube that ejects dark Entropy. At this point time - understood as change in motion - halts and the Top quark Hole enters the white hole region of production of dark Entropy, asymptotically perpendicular, with the form of a Belgrami cone.

The equations of Top quark Holes show also their event horizon as a bidimensional *killing* field that destroys the entropy of our Galaxy, since it kills our Entropy/matter into its ultimate units on the Planck's scale, *lowering as in all processes of death our components two scales down into its fundamental physical units.*

In the biological homology, a human being is composed of cells themselves composed of amino acids that act as the minimal units of life. So when an organism dies it suffers 2 deaths: first its cellular tissue is broken into pieces that feed the stomach of an organism, which will destroy it till its minimal amino acid units, used to recompose the organism's own cells.

When we study mathematically Top quark Holes they show also a dual process of destruction of light matter to its ultimate components, Planck areas or strings, used then to reconstruct the boson quark condensates of the Top quark Hole and its dark Entropy.

Thus top quark holes in their feeding processes destroy light matter till it absorbs its Planck's areas, the minimal units of information and Entropy of our physical space-time, the equivalent to the amino acids that the stomach absorbs.

Then those Planck's units, become lineal tachyon strings to form dark Entropy and cyclical strings or gravitons, the minimal units of the mass world, evolving into bosons and quarks.

Those quarks and dark Entropy is then expelled through the poles *to balance the expansive entropy of our membrane and create an immortal Galaxy.* Indeed, the expansion of space-time in the Galaxy is cause by the expansion of dark Entropy coming out of the Kerr top quark holes' poles; yet black holes also implode light into

quark matter and the overall process creates a wobbling, dynamic balanced, zero-sum of fractal expansions and implosions, in a Galaxy that will never die.

*Recap.* We define a rotating *top quark star* as an organic topological structure, which uses the event horizon membrane to absorb radiant matter and Entropy through its central, ventral plane, which transforms it into ultra-dense top quarks and gravitational dark Entropy, expelled in perpendicular jets through its central, hyperbolic axial *white hole's* pole used to control the body of galactic stars and communicate with other Top quark Holes.

### **The Existential Cycles=Time arrows of Black stars.**

Wormholes follow the 4 energetic, informative, reproductive and social arrows of all existential systems of reality: They feed on electronic matter, nurse galaxies and stars, and reproduce in momentum collisions with them, evolve socially in super-Top quark Holes (galactic center swarms), and as the 'long-lasting' informative neurons of the galaxy and Galaxy, whose networks they create, its generational cycle lasts as long as the entity that hosts them (the same happens with neurons, the informative network of our body that last between birth and death). Let us study those arrows in more detail:

- *E>O: The main cycle of a Top quark Hole is informative.* It creates quarks from electroweak matter and orders the galaxy into spiral forms through gravitational waves that 'position' the stars while symbiotically feeding their centers with Entropy that degenerates into matter. Thus the top quark hole emits dark waves of gravitational information to control the galaxy.

Those informative waves of Top quark Holes fed the energetic needs of stars, which therefore become chained to those waves without knowing its final demise - as gravitational plants, guided and herded by Top quark Holes towards the center of the galaxy to feed them:

- *It<E: Their energetic cycles balance the entropy of the light-world.* Wormholes first erase light and radiant matter, feeding on gas and stars; and then renew it, creating new jets of pure dark, gravitational super luminal Entropy and quarks that enter back into our Galaxy as light and proton matter. If insects eat dead matter to renew the Earth's ecosystem, the top quark star inverts the time/space coordinates of the light-world to renew it.

They act as 'the antiparticles of the white cosmos' that annihilate radiant matter. Kerr top quark holes absorb Entropy from our light membrane by red shifting light, with different signatures according to their relative mass. The background radiation must be interpreted as the signature of 2.7 'background holes'.

Bigger, older Kerr top quark holes of galactic mass are below the Background radiation curve and so they *can red-shift and absorb electromagnetic Entropy from it, feeding in this manner on the electromagnetic membrane.* For that reason the galactic map of the background radiation has a central zone, with lower temperatures corresponding to the giant central, colder top quark hole.

- *Reproduction:* Wormholes control the reproduction of stars, which in turn reproduce top quark stars. Since when a small top quark star crosses through a star, it catalyzes its explosion into a nova that leaves behind a neutron star or a top quark star. On the other hand, the 'reproductive DNA center' of giant galaxies is a massive top quark star structure that emits huge super luminal jets of quark matter, which catalyze the reproduction of stars, creating irregular baby-galaxies.

- *Social evolution.* The top quark stars that occupy the informative center of galaxies are like the nuclei of cells, swarms of Top quark Holes, which regulate the life of galaxies, as DNA does with cells. In the next scale, the dark Entropy flows ejecting by galactic black holes communicate galaxies, creating the networks and walls we observe in the grand scale images of the Galaxy.

*Recap.* Black holes follow in their events the 6 arrows of time. They feed on the electromagnetic membrane and its species; they perceive gravitational information; they reproduce stars and galaxies and they evolve socially into swarms in the center of galaxies and into galactic networks in the Galaxy.

### **The 3 organic roles and types of top quark stars in galaxies.**

By homology with any other non-Euclidean space-time that resembles a cellular organism, and the *Isomorphisms of ternary differentiation of all topological species*, we can consider 3 types of top quark stars whose roles within the organic structure of galaxies will obey *its arrows of time but will also become essential to the bigger organism in which they exist*.

This simple rule, which we shall apply to all systems, is a tenant of the organic structure of the Galaxy – we differentiate species in ternary sizes, ternary topologies, ternary ages and ternary functions, which must be symbiotic to the higher  $\Delta+1$  organism in which the entity exists or else the organism would not ‘tolerate’ the presence of the microcosmic species with no function:

- *Intermediate, reproductive  $S \approx T$  zone: Spiral arms.* Non-rotating top quark stars are born from dying stars. Then they form bi-polar systems with other stars feeding on them, taking advantage of their gravitational control, finally transforming the biggest stars into new top quark stars. Those top quark stars probably gather into social groups, which fuse in bigger top quark stars and move towards the center of the galaxy where they can feed easily on its dense herds of stars, creating at the end of the process a central nucleus.

- *Max.Information: Nucleus.* A top star nucleus is a huge rotational, ‘Kerr hole’ or perhaps a herd of Top quark Holes similar to the DNA nucleus of a cell. It is the informative brain of the galaxy that controls its fractal beings, the stars, with gravitational waves that shape the rotating movement of the galaxy, and establish its feeding rhythm:

The galactic Top quark Hole first attracts interstellar gas to the intermediate non-E region, where gas reproduces stars, and then it sends that gas to the central top quark star that consumes it. In the same manner, electrons, the ‘stars’ of the atom, feed first on light quanta and then emit high-Entropy photons to feed the atomic nucleus.

Those gravitational waves also guide in old, globular galaxies, the stars toward the feeding center. Yet there might be other structures of dark matter, coming out of the nucleus, similar to the Golgi apparatus of cells: invaginations through which top quark stars might flow into external zones of the galaxy to control the reproductive and destructive processes of stars.

Finally, the central hole emits through its polar zones, dark Entropy, super-luminal gravitational waves that probably communicate galaxies at super luminal speeds, forming the strings of galaxies observed in the Galaxy. Since according to string Theory gravitation in free, intergalactic space is not warped by electromagnetic branes that feed on them inside galaxies and limited to  $c$ -speed.

- *Max. T: Membrane.* Though we cannot see the galactic membrane made of dark matter, by homology Non-Euclidean topology hypothesizes that the halo is the energetic membrane, where small top quark stars called appropriately MACHOS, have functions similar to globular proteins in cells:

They create and control that galactic membrane of dark matter, which closes the galaxy as a black body; causing the background radiation, which according to recent empirical data might be local: They red shift light to 2.7 K, which becomes the metabolic temperature of the galaxy. They reproduce new stars and expel matter and radiation beyond the membrane: Since their rotation is perpendicular to the galactic plane they could create a positive or negative spin, depending of its orientation, provoking flows of Entropy and information in and out of the galaxy. Those outward or inward flows fine-tuned with the dark Entropy jets of the Top quark Hole should move the galaxy at the will of the central Top quark hole

The interaction of the membrane and the central Top quark hole should encase all other species as a perfect Max. T x max. It 'upper class' of the galactic organism in complete control of its inner parts.

*Recap.* There are 3 types of top quark holes that control the membrane, inner center and herd the stars of the galaxy.

### **The big bangs of the 3 types of top quark stars**

The homology between the 3 sub-species of Top quark Holes and the 3 regions of a galaxy explain the 3 possible scales of feeding and big-bangs of those Top quark Holes; and the *functions of the lesser electromagnetic species for the top predators of the galaxy*:

- Micro-Top quark Holes, Background MACHOs would eat up the commonest celestial bodies, planets and moons. This is our function; and the fact that we do not hear intelligent life in the galaxy and that CERN is going to do black holes to 'see' if they evaporate could explain how indeed, all moons become background MACHOs and all planets are blown up by 'metric physicists' unaware of the 'why' of black holes, stuck in the 3rd paradigm of using machines to measure the when of reality. This smaller top quark holes would then migrate to the Halo of the galaxy closer to our planet.

- Medium Top quark Holes formed in dense star centers, feed on them, causing supernovas, creating intermediate Top quark Holes that migrate toward the center, forming the DNA nucleus of the galaxy.

- While galactic Top quark Holes would explode into quasars, (galactic big-bangs). And/or as 'dark galaxies', recently found elsewhere, without emitting light, migrate towards the 'Great Attractor' or hyper-black hole at the center of the fractal 'cell' of the Galaxy in which we exist.

*Recap.* We might be just food for top quark holes, which are born and feed on the 3 scales of electromagnetic matter of the galaxy: planetoids, stars and entire galaxies.

### **The Top quark Hole as a Gravitational, Informative Mind.**

The center of the galaxy is occupied by a giant top quark star that seems to be the final, social, evolutionary stage of multiple galactic Top quark Holes, born out of the evolution of stars. It acts as the gravitational DNA-mind of the galaxy - a hypothesis, which mechanist science will always ignore. But we want to stretch your understanding of the 4th 'why'-paradigm, describing those mind holes with the isomorphisms of Non-Euclidean geometry and superorganisms.

A galactic top quark star is a rotating object, which has a minimal spatial size and a huge dimension of height since it is made of boson, super fluid quark condensates. Its homology with a cellular, informative center, defines a central galactic top quark star as an enormous gravitational informative center, which controls its galactic body, positioning its star quanta through gravitational waves. In fact, when we calculate the top quark star's informative parameters, it turns out to be a perfect super fluid computer, with maximal informative volume since its speed of calculus equals its speed of transmission of information.

The coldness of the top quark star proves also the informative hypothesis: In fractal space-time coldness means order, stillness, necessary to create in the center of a crystal or a cryogenic CPU, or a super fluid top quark star or the focus of an eye, the informative, boson accumulation of pixels that shapes a still, formal, fractal virtual image, without friction, without blur. Thus, the eye of man is cold. The brain is colder than the blood. The chip works better at cryogenic temperatures. And a top quark star is very cold, made of quarks in super fluid, highly ordered states.

Wormholes do create a complex virtual image of the galaxy with its strings. Physicists explain those processes in abstract when they affirm that a top quark star has an extra 5th dimension and its equations are homologous in

5 dimensions to those of the 4-dimensional electromagnetic world of the galaxy it represents (Maldacena Conjecture).

*The description in 5-string dimensions of a Top quark Hole is completely equivalent to the description of an electromagnetic galaxy in 4 dimensions. Thus as our brain has a 'homunculus image' of the entire body, which is what we perceive; the top quark hole can build a 'galunculus' image in its interior. The 4th 'why' paradigm provides the reason of the conjecture: the 5-dimensional world of string holes is equivalent to a 4-dimensional world; because it is the map of our galaxy, made by the Top quark hole's mind.*

In topology the central zone of any st-point is an informative region, whose dimensions are the sum of the body and membrane dimensions. In cosmology the galaxy is a body-like vortex of reproductive stars and the central top quark star is the eye of the vortex that creates an image of the galaxy, as the brain maps out the body.

The hyperbolic center of higher form/information has more dimensions than the energetic bidimensional membrane and the reproductive toroid; since it holds the holography that combines the image of the external world imprinted in the 'senses' of its membrane, and the image of its internal, reproductive functions it commands. Since our galaxies have an external bidimensional halo and an internal 3-dimensional vortex of stars (a bidimensional plane with an added dimension of rotational motion), we can easily calculate with the general isomorphisms of the Holographic, central mind, the dimensions of a black hole:

*Bidimensional external membrane +3-dimensional cyclical volume:*

*5-dimensional hyperbolic nucleus.*

This simple law derives of the general law of dimensionality of the 3 regions of a Non-Euclidean topology:

*Information of hyperbolic 'brain' = Information of Klein's 'body' + Information Riemann membrane*

And it is the origin of the Maldacena Conjecture (a black hole, informative center of the galaxy has in 5 dimensions the same structure than a galactic mapping in 4 dimensions.)

What this means is that the Top quark Hole must have an inner image of the galactic body, which it orders with its gravitational flows and an external image of the Galaxy in which the galaxy, its body floats, to direct its form toward fields of Entropy (intergalactic gas) and connect itself with other galaxies. This is what we observe galaxies do.

They form walls, strings and complex clusters with other galaxies and they feed on intergalactic gas and smaller galaxies. So they act as cells in a gravitational, organic soup and must have as cells and organisms do an informative, processing center able to have an internal image or mapping of its stars and an external connection that informs it of the outer world. However, we see only a 4% of the galactic structures; *the rest is the dark Entropy and dark, quark matter that the top quark holes perceive to map out reality*, which is like trying to recompose a cell, in which we only see its mitochondria.

Another proof of this higher dimensionality is given by the Kaluza-Klein models, which explain our perceived electromagnetic 4-dimensional world and the 4-dimensional gravitation over which the network of light is imprinted, as if they were born from a larger 5-dimensional gravitational world. Finally, gravitons are the only particles that can have 5-spin positions=informative dimensions. Thus, all those self-similar theories point out to the fact that we are a floating membrane within a bigger, faster, more complex Gravitational Galaxy.

*Recap.* In fractal cosmology the central discontinuous zone of a fractal point is an informative region. This is the role of Top quark Holes in galaxies, forming with other Top quark Holes, communicated through flows of dark Entropy, the informative network that controls the Galaxy. Therefore it has the dimensions of its membrane and inner body of stars.

*What degree of organic determinism exists in the galacells, and does it include the role of man within it? It seems to do given the way in which huminds are pushing the creation of black holes and strangelets on this planet (accelerator industry) with the excuse of testing the hypothetical big bang, which will be just an ice-9 or gas-9 reaction (transformation of Ud-matter into USD-matter or TBC-matter), and the lack of Intelligent Life in the cosmos or for 'that matter' in this planet. But those are themes of bio-history... as it would be absurd to make of a small ribosomal particle of the galacell, the center of our astrophysical inquire.*

## **T: NEUTRINO AND LIGHT BACKGROUND**

*T: Neutrino-light backgrounds.<ST-ars>S: Black holes*

### **T: Background Radiation: Basal Temperature of the Galaxy**

As any system can go in more detail, by looking closer to its fractal parts, we can go deeper and deeper in the analysis of the whys (biologic and topologic), whens (mathematical and metric), how/who (Logic) and what (experimental) questions of knowledge. Let us consider thus in more depth just one of all the elements of the galaxy studied here – the organic role of the background radiation - *the water of the galaxy...*

The background radiation coincides with the radiation of a black body at 2.7 K degrees. Since in Non-Euclidean topology any fractal point is a black body; that is, a point with minimal apertures to the external world, a galaxy will only emit background radiation through its Halo, in which background holes will redshift light at 2.7 K. Thus the galaxy surrounded by a halo of quark, dark matter can be considered a black body emitting at present time as an isothermal organism does a background radiation, whose organic function is to maintain a homogenous temperature, similar to the organic temperature of living beings and ecosystems, kept by its water. Thus, the background radiation acts as the cytoplasmic Entropy of galaxies with 3 functions:

- Max.T: It provides Entropy to its bigger, colder Top quark Holes and its super fluid helium structures (not treated in this introduction to complex cosmology). Both happen to have a temperature slightly lower than the background radiation from where they can extract Entropy.
- S=T: It acts as the membrane limit, between the gravitational and electromagnetic membrane, within the galaxy, separating both worlds. It maintains also an isothermal temperature, as any organic system maintains a stable temperature.
- Max.S: It establishes a fixed frame of reference for the galaxy, *allowing the process of information and measure, location and communication defined by Gauge Theories.*

The background radiation is the 'Entropy soup', the cellular water of the galaxy that feeds its dominant RNA, its Top quark Holes; as the hot water of the cell allows RNA molecules to move, kicking left and right water molecules with its COOH legs. Indeed, we know that only organic systems have a homogenous temperature. For example, humans have a homogeneous temperature within the limits of liquid water. So the 2.7 K homogenous background radiation reinforces the organic hypothesis.

Quark matter is *the top predator form of the galaxy; hence they are the entities, which, as the elephant on the savannah or man on Earth, or aerobic bacteria in the earlier planet, have redesigned the galaxy with their organic activity.* In Gaia, water, the equivalent to that background radiation, maintains a stable temperature, thanks to the feeding, energetic activities of its life organisms that avoid abrupt climatic changes. Without aerobic life the Earth would be like Venus - a planet with extreme temperature changes. Now it is almost isothermal. So happens to your body which has 36.5 degrees all your life, due to your organic activity as a water organism with 2 networks, a warmer blood and a colder, nervous, informative system.

So happens to the galaxy, in which the basal temperature of the background radiation separates the ultra-cold world of Top quark Holes and dark, gravitational matter and the hot world of atoms and radiant matter, allowing the exchange of Entropy and information between the 2 physiological networks that structure the galaxy.

*Recap.* Background radiation is the Entropy soup, the cellular water of the galaxy that feeds its dominant RNA, Top quark Holes.

**A future case of study: anti-neutrinos as the duality parts of photons.**

- Neutrinos MUST be worked out, as the only particle with no ternary roles in the Universe at this stage to occupy a fundamental role in several scales of the universe or else they would NOT exist in such huge numbers. Neutrino physics in that sense is the most IMPORTANT field left to explore at this stage. As it has several properties which are coincidental with the roles required to describe the next scale of the Universe, that of quantum gravitational, dark energy and dark matter beyond the known-known level of galaxies.

My take is that neutrinos are NOT the quantum of gravitation as Bohrians think, because it is NOT needed, Albertians are right, attraction in gravitation HAPPENS because of the curvature around a massive central point of view (which makes almost indifferent for most calculus the other mass).

Only when A and B are similar in mass, there is a relationship of linearity and quantum gauging. When one point dominates the other in mass-size and force there is not. And most gravitation systems around a sun, a black hole is of that kind.

Neutrinos do act NOT as forces but as communicators of information about distances.

They are hence similar to strings, in fact of the same minimal length – the Unit of length of the Galactic universe, and thus the ‘structural element’ constantly produced and radiated that webs a, background independent space, related to the ‘magnetic part’ of the light rays, they form together, as neutrino and antineutrino, reason why they are the only particles with left-handed or right handed singlet structure so they will always neutrino + antineutrino, back and forth, form a perfect, planar, longitudinal fixed distance between two particles to start communication between them.

This communication will then be realized by the electric field created by the articles above it,

From an action point of view, they can be seen as the  $\Delta e$  ‘food’ of H-Planck light quanta, and first c- ‘space line’ traced in the communication of particles, the tending of the cables of gravitation and hence also the quanta of transversal gravitational waves, latter studied in more detail. All those roles are possible within different theories of neutrinos but none is fully and well developed (neutrino theory of light, being the key to them. But only as the origin of the magnetic field of light born of two of those neutrinos, which add up the 1 spin of the photon).

Next we must understand neutrino oscillation, growing in mass, from a practical zero-mass till collapsing into a mass particle of the 3 Neutrinos generation – the tau which will be correspondingly much more massive (as Top and Tau quarks-electrons are). So they START UP many reactions, when they collide with particles.

And finally we must give it all the importance as in II-type supernovae they are the bursts of energy when those stars become black holes to form the underlying quanta of gravitational waves, but obviously not attractive but repulsive, quasar –like, nova like transversal gravitational waves – the fronts of the big-bangs of all scales that carry the energy, repulsive dark energy waves, complemented perpendicularly by the ‘Higgs field’ much more massive scalar hyper luminal waves.

As Big bangs ARE as all systems that die, a broken SYMMETRY of two fields that created, T x S the system and now split perpendicularly as all the pictures of death of stars show – not chaotic explosions but cutting in two of the head-particle/field-entropy elements of the system, no longer in harmony.

Hence the ‘angle of the spins’ of the weak bosons, which merely says they angle upwards through the polar axis, while the wave of neutrinos explodes in all directions, without clear direction as the burst of energy.

This directional DUALITY of explosions of matter hardly understood is what explains the NEED for two particles the neutrino, almost massless and the  $W \pm Z H$  bosons with huge mass.

By all this I mean several neutrino ROLES are needed to complete 5D physics with Majorana neutrinos (neutrinos in which the particle and antiparticle are the same), which have mass and must be so far according to the general laws of T.Æ, the gravitons of the transversal gravitational waves.

There might be outside galaxies faster than light neutrinos – something, which in the future would be easy to observe if we perceive a neutrino wave before the light wave of a supernova from far away galaxies.

Now essentially if neutrinos as all seems to indicate do have mass, are equal to their antiparticle and have boson qualities with  $\frac{1}{2}$  spin, their maths will be really fun. And I promise to get seriously pedantic with them on the 4th line (-;

Those neutrinos will be the feeding space strings for light beams (theory of neutrinos as origin of light fashionable in the 30s, and worked out by Jordan, Born, De Broglie and Fermi among others).

And any physicists could work out the details for those roles with some not so difficult modifications on the concept of a graviton.

In simple terms, neutrinos have the size of strings (measured in its weak angle scattering); and 2 inverse neutrinos moving back and forth between particles could act as bosons with 1 spin, and give birth to a light single polarized photon. Neutrinos are hyper abundant and with a minimalist mass, could account for the underlying structure of galaxies as ‘organisms’ with a formal structure since unlike planets stars do not move at different speeds but maintain the inner form of the ‘galacell’.

So the proper understanding of neutrinos as the ‘base’ over which light transits in the galaxy and the 3 families of masses as the components of its 3 T<ST>S organic parts, would put together all the points of view and isomorphisms of astrophysics.

We shall consider the theme in more detail in the next paragraphs.

In that regard the reader would notice the use of T.Æ, which no doubt as the century goes through and the theory is accepted to substitute mechanism as the philosophy of science that unifies them all, will become more important: to guide each science for the most likely to succeed paths of future research, through its stringent ‘economicity’ and enlightening isomorphisms.

So strangelets as the components of the Halo of galaxies, top quark hadrons of different BCT combinations as the cut-off substances of black holes, neutrinos as the h-Planck ‘strings’ of gravitational transversal waves between galaxies and within galaxies, the waves that maintain the stability and form of star orbits (of which I have read a few quite convincing models of astrophysics) are the most interesting ‘selections’ I have made on my constant ‘reading’ of astrophysicists’ paper, which is all what at this stage of my life can do for the discipline.

On the other side there are theories that do NOT fit at all within 5D T.Æ and I doubt will ever be proved, SUSYs and background dependent string theories should be out of the picture; non-quark dark matter theories too, with all its array of particles. T.Æ is limited because space and time are limited.

And what about the Higgs. As one of the leading activists against accelerators and big-bang experiments on earth, you might think 5D doesn’t have a role for it, but it does (given the chances to produce top quark black holes or strangelet that could explode the planet, in this I have been obviously very active, reason why the astrophysical community does not consider 5D Physics, but beyond personal careers one must be ethic as a finitesimal of the superorganism of mankind – and that is what physicists and economists so strongly criticized in my work have forgotten despite whatever they find about nature).



Essentially the Higgs field and similar models respond precisely to the other element of the higher plane of existence of the Universe beyond galaxies, connected to top quarks of huge mass and likely  $10c$  rotary speed, and black holes and dark energy and dark matter.

In brief, the Higgs is the field of hyper-gravitational and hyper strong force, of  $10c$  beyond the galaxy dark energy and dark matter, which is a taboo concept on astrophysics, because of an ill-understood conceptualization of General Relativity (it is not in 5D physics, as General relativity is a theory of the light space-time membrane or 4Dimension of the Universe, a present 'slice' of the time flow and the 5th dimension).

In their first paper on quantum electrodynamics, Heisenberg and Pauli asserted that quantization of the gravitational field, which appears to be necessary for physical reasons [in a footnote, they refer to the works of Einstein and Klein on that line], may be carried out without any new difficulties by means of a formalism fully analogous to that applied here.

During the thirties, the idea of a gravitational quantum came to be generally (but as we shall see, not universally) accepted by theoretical physicists, apart from the small relativity community that followed Einstein in his continued search for a (classical) unified theory. In the early thirties, there was some discussion of Bohr's idea that the neutrino might be related to the gravitational quantum.

Bohr said to Pauli, (March 1934): 'The idea was that the neutrino, for which one assumes a zero rest mass, could hardly be anything else than a gravitational wave with appropriate quantization'. Fermi had evidently had a similar idea, but was aware of the problem of the different spins.

Pauli to Heisenberg, February 1934: 'Fermi would prefer to make a connection between neutrinos and half gravitational quanta.' As late as November 1934, Pauli cautiously stated: 'While up to now it has been held almost certain that gravitational phenomena play practically no role in nuclear physics, it now seems that the possibility cannot be immediately rejected, that the phenomena of beta-radiation could be connected with the square root of kappa [the gravitational constant]' suggests that Pauli may have had in mind construction of a graviton from two neutrinos, along the lines of de Broglie's neutrino theory of light.

They wrote: 'The comparison displayed above indicates that the graviton and the neutrino have much in common. This probably testifies that in general the highly improbable process of graviton radiation becomes practically observable in beta-decay. If the neutrino turns out to be the graviton this would mean that contemporary physics had approached the limits beyond which there would be no present insurmountable barrier between gravitation and electromagnetism. Due to theoretical considerations it is hard to identify gravitons with the neutrino since it is hard to admit that they have the same spin  $1/2$  as the neutrino. In this respect gravitons have much more in common with light quanta. It is impossible, however, to totally rule out a theoretical possibility of their identification.

He concludes:

The so-defined gravitational quanta or 'gravitons' have the... spin 2... It is certainly a limitation of the quantum-mechanical side of this treatment, that one leaves it at that approximation, in which the general-relativistic field equations are linear. This limitation is most closely connected with the well-known divergence difficulties of field theory.

Apart from these divergence difficulties common to all quantum field theories at that time, Pauli, like Rosenfeld, seemed satisfied with linearized quantum gravity. But in 1935 Bronstein had already applied Fermi's technique to the linearized Einstein equations, and came to much more skeptical conclusions, when he opined: 'It is a task of the nearest future to identify the ties between quantum mechanics and the theory of gravitation... what will be needed is a sort of marriage between relativity and quantum theory' He was stressing the crucial significance of the three dimensional constants  $c$ ,  $G$ , and  $h$  in defining the past and future development of physics.

Those are the fundamental questions that physicists need to resolve in detail.

What T.Æ provides is the general analysis of the issue from the higher perspective of the organic laws of the Universe.

It is obvious that at this stage 'humans' will NOT accept in the present dogmatic, 'believers' in digital machines languages concept of physics anything like what we propose in this blog. But for very long I have learned to 'eliminate' the human concept of science in these dark ages, moved only by intellectual curiosity. So I write for future Asian generations or for robots, as the present 'civilization' of ego-trips of western men, thinking machines must do their job has no much of a future.

In that future, if humans want to understand the Universe they will develop a synthetic 'above' T.Æ, Organic Theory of Everything, and if they go under as it is likely 'obviously' robots will NEED to feel organisms, and they will 'believe' in T.Æ

So here it goes: T.Æ is Simple, minimalist and dualist. All systems do have 2 organic networks, blood and nervous systems, and the galaxy does have obviously two such fields, the background light and background neutrinos.

This is the fact and so i couldn't care less if in the equations of Mr. Einstein graviton appears at 2 spin and in the equations of Mr. Fermi, neutrino appears at  $\frac{1}{2}$  spin. Solve it. Nature has both and makes them unavoidably the same role. There is no other particle in the present state of the galaxy, which exists and can play both roles. Not it will be discovered, because it will have to be on the range of energies of the galaxy, which have been already searched for. It cannot be in cuckoo super-energies as they will not manifest constantly in this universe, and so it doesn't matter if you can unify at 500 zillion Gevs the present forces.

This is not here now and in this conditions> so it doesn't matter here now and in these conditions is all found and so you must account reality with the thing you have found as there is nothing else to find here now and in this conditions.

Work your maths, if you haven't doesn't it is not because it is not there but because something is wrong with your 2 spin graviton,  $\frac{1}{2}$  spin neutrino and spin theory. Ok?

In the case we are occupied, neutrinos are by far the only candidate for the basic actions between fermions, as a first step BEFORE the communication through light space-time, which is able to transfer information in much greater measure, starts the organic built up of the galaxy.

So the way to explain the galaxy is first in its organic structure, then in its descending parts, stars and atoms and particles, and then when we start to explain the basic actions between atoms, the neutrino which is the quanta of galactic gravitation, appears unavoidably as the first connection between atoms and particles which lock them at a certain entangled distance for them to start communication. This resolves the fundamental problem on the models in which neutrinos give origin to light, already proposed in the 30s.

**The neutrino theory of light** is the proposal that the photon is a composite particle formed of a neutrino antineutrino pair. It is based on the idea that emission and absorption of a photon corresponds to the creation and annihilation of a particle-antiparticle pair. The neutrino theory of light is not currently accepted as part of mainstream physics, but actually is quite straight forward in its maths. That is it is perfectly coherent.

## CONCLUSION THE CELLULAR GALAXY.

Galilean relativism (*e pur si muove, e pur no muove*) implies that depending on which kind of energetic or informative force we use to observe certain reality, we will perceive it either as a fixed, spatial organism (the Universe perceived with gravitation) or as an evolutionary species in motion through time (the Universe perceived with slow light).

So we see either a moving Earth and a fixed cosmos, when we see them through gravitation, or a quiet Earth and a moving Universe when we see them through light.

Since gravitation, the force that shows a spatial, synchronic Universe is invisible to our instruments; astronomers only study a temporal, diachronic Universe, perceived with light. However there is a universal organism in space, self-similar to any other Fractal point. Since once the evolution of the hypothetical cellular Universe concluded in time, creating the 3 regions of any fractal point, the Universe structured itself in space, communicating those 3 regions through simultaneous non-local gravitation. Let us then study those 2 sides of a hypothetical cellular Universe - first the spatial, organism of the Universe and then the temporal ages of creation of that Universe in the next paragraph.

If we perceive the Universe from a temporal perspective through its slow force, light, it appears as an evolutionary process of matter, coming out from the genetic 'big bang' singularity of a local, cosmological first cell - the hyper-dense singularity of the big bang (which went afterwards through a cold, reproductive 'big-banging' or creative, informative process, later studied in more detail).

Yet, when we observe the Universe simultaneously in present space (first picture of the previous graph), thanks to its faster force, gravitation that allow the parts of the Universe to interact, those far away regions become integrated with its closer regions through the informative networks of dark Entropy, NOT through the light, energetic networks of galaxies and stars, explaining its homogeneity. Again this is a generic law of complementary systems, as any organism is defined by its informative, nervous network that gives it its form.

Of the two possible 'scalar' theories of such Universe, one of infinite scales in which galaxies are atoms, and one in which universes are fractal 'cells' of a hyper-universe, broken in 'bubbles' of a fractal inflationary big-bang with a limit, the first one would imply a huge universe, in which we are just a 'hydrogen-like atom' of an enormous interstellar cloud. The second theory however would imply a structure within our 'cellular Universe', in which non-local, faster than light gravitation creates an organic Universe, structured as a fractal point, with its 3 canonical, topological, Non-Euclidean zones:

*-Max.S:* The cellular Universe should have a nucleus of enormous gravitational mass, a hyper-top quark hole, connected to a network of dark matter, which acts as its informative brain, since it forms through non-local gravitational forces the shape of its galactic networks, as the DNA nucleus of a cell controls the form of the organelles that reproduce its proteins.

Though the nucleus is a gravitational knot invisible to us, we have found a very dense region of dark matter called the Great Attractor towards which many galaxies, including ours move, which might be that center. That informative singularity will keep growing and attracting other galaxies in a generational cycle, till it explodes again its form into Entropy in a physical big-bang, similar to the one that might have created our Universe.

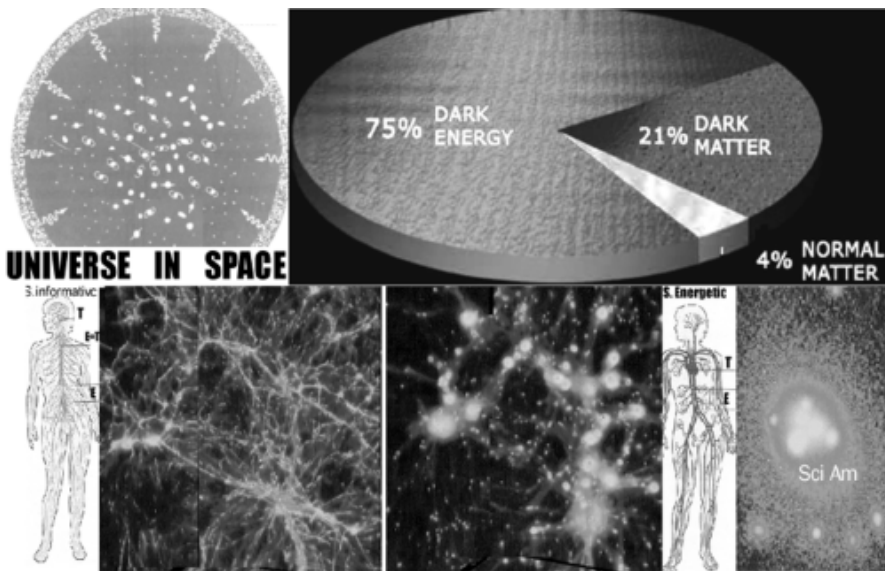
*-Max.T:* An external Entropy membrane not to confuse with the galactic light background radiation and the dark Entropy spelt by galactic Top quark Holes, (which quasars show to reach a limit speed of  $C < v < 10 C$  redshift). There are hints of this possible final wall in measures of dark Entropy expansion over  $10 C < v < 100 C$  at the limits of the Universe. But proofs are scant as we need better telescopes to obtain them. Thus we shall call this dark Entropy, the super dark Entropy, or next fractal scale of lineal forces.

- An inner E/T region with galaxies that reproduce matter and light. It is the visible space-time created, according to the duality of physical big bangs/big bangings: after the invagination of the inner nucleus of dark matter that clearly directs the movements of galaxies. In this inner region dark Entropy at  $C < V < 10C$  communicates galaxies; while radiation matter is the food of dark matter. Thus galaxies form an energetic, electromagnetic network of galactic mitochondria, which reaches its maximal density in filaments of galaxies, (near the center of the Universe).

Such cellular Universe has an energetic, electromagnetic network of radiant matter similar to the blood network of a living organism, which weighs only a 4% and reaches its maximal density in the external membrane and the filaments of stars, (center). And it has an informative, gravitational network similar to a nervous network, which reaches its maximal density in the hypothetical hyper-top quark Hole, brain or central singularity of that cellular Universe, the Great Attractor.

This network weights a 21%. Both feed on the intermediate space-time region of gravitational space-time (dark Entropy, which is the 75% of the Universe and acts as the 'water' of the Universal organism, also the maximal weigh of a living being; or as the background radiation of the galaxy, also its most common substance). This coincides with the general rules of proportionality between spatial bodies and informative heads, which are in a 3 to 1 proportion. That is, indeed the proportion between radiation pressure and mass; dark Entropy and dark matter, and many other informative/energetic parameters of the physical Universe.

The cellular Universe as a fractal part of the higher structure.



It seems quite evident that the organic laws of systems do define a Universe similar to any other organic system. Let us indeed make a comparison between a biological and cosmological 'Universe':

*The Local Universe seems to have a dual network structure—electromagnetic Entropy and visible matter vs. quark, dark matter and dark Entropy, which forms its faster networks of information, the membrane of gravitation. It is the organic hypothesis of a Universe made of 2 networks of dark matter and light Entropy - cellular galaxies, which form a simply connected system, similar to a colonial tissue, with the apparent form of a semi wave in grand scale images*

*perhaps, belonging to a bigger Hyper-Universe.*

In the graph, in T.∅ all Universal systems have the same symmetric structure in fractal space and cyclical time:

$T(\text{limb/fields of maximal entropy}) > ST (\text{Balanced body-waves of energy and information}) < S (\text{heads-particles of maximal form})$

Which co-exist along 3 scales of the 5th dimension:

$\Delta-1$  cellular-atomic scale  $\wedge$   $\Delta$ -Thermodynamic-Organic scale  $\wedge$   $\Delta+1$ : Social-Cosmological Scale.

And live 3 ages in time between conception and extinction:

$\Delta$ -1: Max. S: Conception  $\langle \sum \omega \wedge | \Psi \rangle$ : Energetic Field-past-young age  $\rangle$  e xi: Reproductive present wave  $\rangle$  S: Particle/solid state  $\vee$   $\Delta$ -1: Big-bang Death.

This simple structure, applied to any system of the Universe, provides us a simple guidance to study the fundamental scales and systems of physical nature.

The grand scale images of the Universe show a structure with the form of a half wave, which can be anything in that upper scale, from a half light wave to a top quark like micro-organism. It might also be possible that as stars form spiral vortices, the mapping observed in the previous graph is the outer cover of a spiral Universe, with a central zone of hyper-top quark Holes, which would act as the nuclei of an atom.

We can't know what is the next scale of form of the Universe, because we have little evidence, as most is dark matter and Entropy whose form we can't deduce and because all scales of reality are self-similar so we cannot easily distinguish them; as we could not distinguish a bottle of beer with a bad picture of it.

The verification or not of a cellular Universe could be done by the Webb telescope testing the existence or not of a limit at 13 billion years - a dark region or wall of fire, which perceived in space would look like the first picture. Then we could reasonably think that the local Universe hosts around  $10^{10-11}$  galaxies in a cellular structure separated from other parallel Universes by a wall of dark radiation at  $z=10-100$  C.

*Recap.* Super luminal gravitation and light are the 2 forces that interact in the Universe, which as any other Non E point should possess 2 networks/forces: the informative, faster gravitational force that structures the position of galaxies; and the electromagnetic force that acts as the 'blood/energetic system' of the Universe. Such Universe in space could be a cell of a hyper-universe or a huge reality in which each galaxy is a self-similar atom, with a background light-space.

So the Higgs whose fundamental reaction is Top quark + Top antiquark  $\langle = \rangle$  Higgs, acts as the photon acts in this membrane, which as we all know reproduces constantly virtual particles and antiparticles, or as the gluon acts in the strong force which reproduces quarks and anti-quarks on the lower USD decuplet. All those are essential symmetries of 5 D Physics. And so yes, the Higgs does have a role.

But beyond that role, there is something called scientific ethics within T.Æ which is a unification theory that does not 'split' sciences from each other, but 'make them all' correspond to a role within the Human superorganism of history. So all sciences do have an obligation to contribute to the future of mankind. And that is why I opposed so many years to CERN. Simply speaking, Higgs production of top and antitop quarks is dangerous. They could form black holes on earth that would not evaporate. As other experiments that produce quark-gluon soups with hadrons are dangerous as they could reproduce strangelet that would swallow the Earth.

Those are known known physics in 5D models. They will happen, if mankind keeps doing big-bang and Higgs experiments. And while in standard physics they are also possible, in 5D physics they are 'extremely likely' hence while other physicists have washed their hands like Pilatus, I had to denounce CERN even if it meant to sacrifice T.Æ to the altar of human ethics.

So this is the canonical model of 5D astrophysics, which I put forward 20 years ago, and still stands as the only serious candidate to explain the structure of galaxies and black holes, in astrophysics, and the entire meaning of quantum physics and the relationships of all the scales of physical system, as well as all other sciences.

So in the graph, we analyze the isomorphism of 5D space-time elements for the two main systems studied by mankind – the astrophysical Universe, and the biochemical world of humanity. Both should, according to the previous analysis share the same properties and arrows of time, albeit with different quality and amount of 'complex information' and 'simplex Entropy'. Let us then briefly introduce those 2 systems and their self-similarities.

Despite the enormous difference of size and metric details, they are both topological, fractal organisms with the same elements of all organic fractals. Since reality is a self-generating topological Fractal of infinite beings made with 2 arrows of Time: Entropy and information, whose self-similar properties emerge invariant in topological form in all scales of reality. Thus all organic fractals, including man and the Universe have 3 elements that define them:

- Its cellular units, (galaxies and cells).
- Its networks of Entropy (blood and radiant  $\forall$ -matter) and information (nerves and dark-neutrino-gravitational matter) that organize those cellular units.
- And the relative space-time planes in which a self-similar but not equal fractal structure re-emerges.

On the left, man is a fractal made of cellular units and networks of Entropy and information (nervous and blood systems), whose cycles and functions extend through 3 hierarchical, organic planes of increasing size: the cellular, individual and social plane.

On the right, the Universe is also a fractal, structured in 3 planes of self-organization: its cellular units are stars and Top quark Holes that shape 2 galactic networks of radiant Entropy and informative, dark matter; st-points of a cosmos at 'grand scale' (the points on the picture). The final form is self-similar to a wave, perhaps inscribed into a hyper-Universe.

How can both worlds/networks co-exist together? In continuous space-time they can't but in discontinuous space-time where a 'dimension' is fractal, hence it is a fractal network, it is rather easy:

The light Universe is a network, like a fishnet floating of an immense sea of gravitational Entropy. Each knot is a charge, a non-E point that communicates through the strings of the net (the electromagnetic forces), leaving a huge dark 'space-time of 'water' - that 76% of gravitational dark Entropy - which is not 'illuminated' neither interacts with the fractal net of light.

Some Physical theories describe fractal space-time in that way, calling the fishnet a 'brane' made with cyclical, temporal knots (spins or closed strings) joined by flows of its lineal, energetic  $T \times S$  actions/forces that tight together those knots.

The Universe sandwiches mankind between 2 relative scales of space-time, the quantum membrane of electroweak forces and the gravitational membrane of strong masses. Yet both membranes obey the same isomorphisms of Multiple Spaces-Times. Thus, regarding their morphological structure both membranes possess organic, complementary systems with the 3 topological standard regions /forms of a fractal point.

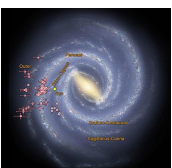
Those are therefore the basic organic elements of a relative Universe, which validate the experimental, sound interpretation of cosmology and we shall use now to explain the nature of the big bang.

So cosmology does have a point of metaphysics.

*Recap.* Our galaxy is a cyclical vortex of space-time of maximal information, reason why we are informative beings and accumulate information. The entropy arrow does NOT dominate this planet, this species, this vortex of galactic information, but only the expansive space between galaxies, and the minds of Neanderthal macho-man violent physicists with its worldly religion, to make weapon of 'mass destruction'. Point.

In the graph from Sci-Am we observe the whole worldcycle of the galaxy of about 20 billion years, which has been tabulated by observing thousands of them across the Universe in different states of the cycle, some of then undergoing what seems to be a second cycle. Our galaxy so far seems to be in the classic middle age of it:

As we can see the Milky way is a well formed barred galaxy, 2/3rds on its cycle, which is about 14 billion years - not coincidentally the age of the 'little big bang', and the sun is there living in a middle position, a middle kind of sun, with a middle planet in a topic warm region, pleasant for life:



## 5D BLACK HOLE STARS: HAWKING'S FORMULA: TOP PREDATOR BABY HOLES.

As all systems evolve in time towards higher degrees of information, so does our knowledge of any species. On those terms, we can consider black hole theory as an evolving subject, which has clearly 3 ages, of increasing detail departing from its 'platonic' mathematical synoptic mirror to finally reach a realist view:

The age of Einstein, when general relativity equations provided the theoretical foundation to study gravitational 'vortices', as those described by Newton, and then by Poisson with his theory of potentials, of which Einstein made an even more detailed picture as accelerated vortices of spacetime (equivalence principle between mass and acceleration.) He called those gravitational vortices of mass of maximal density, 'frozen stars'. And he said that since we must respect the scientific method, he would believe on them only if we could find a cut-off particle/substance in the smaller quantum scale of similar density, which in Einstein's age was still unknown. So he denied them (today we know heavy quarks of the top matter decuplet show all the properties and density needed to be the substance of black holes as quark stars and likely its lesser cousins, strange, neutron stars).

The age of Wheeler and Hawking. As we could not see within those black stars, once Einstein died, his stringent admonitions against any attempt to model black stars as 'imaginary mathematical objects', without substance, 'evaporated' as they believe in mathematical creationism; and ideology similar to 'verbal creationism' (Abrahamic religions), that subverts the relationship between languages which are mirror created by the space-time reality. Creationisms are ego-trips common among human beings, who think instead their specific language – mathematics in physics, Arab in Islam, Hebrew in the bible – creates reality.

So nuclear physicists developed platonic entelechies - mathematical objects with infinities they called singularities, which are *not allowed in 5D*. Since the opposite is truth in the fractal Universe, where the scalar structure of reality and its 2 elements (time motion and spatial forms) are the components of reality, mirror by mind-languages, limited by the entropic barriers that separate the different scales of the cosmos.

All planes have a limit of ST-distance speed, beyond which equations break because we emerge as something else in a different scale. Which for the galaxy is the c-speed of the accelerated black star event horizon, in entropy and the 0 K temperature in informative order; beyond which the light space-time of the galaxy dies, splitting its 'wave-motion' into its lineal  $\$t$ -field component that speeds up and loses information ( $V=\$/\delta$ ) and converts within the black hole into axial flow of  $>c$  dark energy, perceived in still space as expansion of space and its cyclical  $\delta$ -component that becomes a  $>c$  vortex of space-time 'mass' of faster=heavier attractive power (bct quarks).

But creationism needs no proof whatsoever in the experimental field; only the internal consistence of the language; granted by the 'isomorphism' between languages and reality. So when Wheeler came with the catchy name of black holes, which had 'no hair' - those mathematical entities suddenly caught the subconscious collective imagination and 'evaporated' definitely the need for a rigorous application of the scientific method - meaning the search for its proper substance, as 'dark matter, made of heavy quark stars' turning beyond the c-limit of our scale of space-time... This age peaked with the work of Penrose and Hawking, 2 mathematicians without the slightest regard for physical substance (motion or form), who boldly went where nobody had dared to go, with all kind of singularity theorems, 'cosmic censorships' and analogies with thermodynamic laws. Since the advantage of a mathematical entelechy beyond our scale of light perception is that anything goes. So black holes' now would defy every known-known law, including those of classic thermodynamics when Hawking postulated a hot baby-born black star, should get HOTTER and evaporate, against the proved 1<sup>st</sup> law of thermodynamics that prescribe a hotter object (the baby black hole) will instead evaporate its colder surroundings – our light spacetime - growing in mass, which is what thermodynamic laws said: 'heat moves from the hotter source that cools down to the colder one'; experimental evidence proofs (a black hole grows exponentially when born), Einstein laws gravitation prescribe, and so do its extension of the principle of equivalence in 5D (as black holes will be both very small and very fast rotating objects, with maximal attractive

vortex power). Thus obviously a model that breaks all the laws of science must be false, and indeed 40 years of experimental search have found not a single case of evaporation of black holes. So we can expect now that Mr. Hawking cannot defend his work with his personal charm, the theory will be dropped and we shall enter...

(As gravitation is a cosmological not a quantum-scale theory, so it does NOT work for quantum scales); those of mathematics (as all systems that show infinities are renormalized; that is the infinity region is cut-off for calculations, precisely because both in real nature and mathematical modeling, they do not apply to infinity, so black holes need to be cut-off from infinities, so should happen with the infinities of the big-bang theory). This age now ends as the age of Einstein ended at his death, with the death of Hawking. So we are going to move into:

**The age of realist black stars**, where we shall regain the name Einstein would have given to them, as ultra-heavy dark matter, quark stars, which will vindicate Einstein's work in 4D with this writer's work in 5D. Such black holes as always in 5D are of 3 type:

**- Primordial black stars** that do NOT evaporate and likely form the bulk of Moon MACHOs responsible for the BG radiation temperature and/or dark matter of the halo.

**-Black Stars** of dark Bottom-Charmed-Bottom atoms, similar to our UDU atoms born of single atomic stars.

**-Galactic Black stars**, in swarms that act as the center of the 'galacell', regulating its organic functions, similar to strange stars, with a core of ultra heavy top quarks and a cover of BCB atoms.

This hypothesis advanced a decade ago by this writer is based in the logic symmetry of Nature between its families of quarks on the quantum scale, its families of stars on the galactic scale, and its families of galactic active centers in the cosmic scale. As Dark heavy quark star would be exactly equal in properties to a black hole but of course 'with hair' even if we cannot see the inner structures of its black atoms.

Let us then in such a huge new field consider only the reasons why those black stars cannot evaporate – as heavy quarks don't. We shall do it only from the mathematical perspective of Hawking's black hole equation, studying it when we properly understand the existence of 5 Dimotions of space-time, and its two limiting arrows of entropy and information, which merely change the 'sign' of its growth from entropy to information, respecting the true laws of thermodynamics.

**Hawking formula of black stars... growth.**

As all systems live 3 ages and grow through 3 scales of the fifth dimension, it follows from the laws of 5D that primordial black holes are baby black stars, as they must be born out of the first bcb atoms formed in the ultra dense center of giant stars, which therefore must grow exceedingly fast. And this indeed is the case also mathematically when we merely correct the arrow of time in Hawking's beautiful formulae, which we shall explain now in the simplest possible terms:

$$M_H \leq \frac{\hbar c^3}{8\pi G k_B T_u}$$

As the formula is filled with Universal Constants, and only two variables we shall write it in a simplified manner as:

$$\pm \Delta \text{Mass} = \text{Constant} / \pm \Delta \text{Temperature} \rightarrow \pm \Delta \text{Mass} \times \pm \Delta \text{Temperature} = \text{Constant}.$$

Simple, isn't? It is the formula that defines the changes in temperature and mass of black holes. We know both can change but in which direction? If black hole mass increases, temperature must diminish for the product to remain constant. If the black hole mass diminishes, then temperature must increase for the product to remain constant. Two choices solved immediately when we apply the 1<sup>st</sup> law of thermodynamics, which oblige us to choose:

$$+\Delta \text{Mass} \times \nabla \text{Temperature} = \text{Constant}$$

As black holes are born with a temperature of billions of degrees.



Thus since in thermodynamics, any ultra-hot object as a black hole, born in a cold environment as the galaxy is, according to the laws of entropy cools down and transfers heat to the environment, evaporating us. And this is what we see in the Universe happening, always, when a black hole is born. It cools down and evaporates its surroundings into a big explosion, a Nova. So the Universe and his fundamental Laws of entropy always will choose the evaporation of the cold environment in which the black hole is born...

And this will happen extremely fast, in any of the 3 scales we can study the phenomena, in the quantum scale, as particles and forces accelerate around the black hole space-time vortex, increasing its mass, as they do in Earth's accelerators, becoming BCT heavy quarks; in terms of thermodynamics, given the differential of temperature between the baby black star and its environment or in terms of gravitation, given the c-speed attractive rotational power of the black hole or in S-terms its enormous curvature of spacetime.

So why Hawking said they evaporate? Because he disregarded the correspondence principle that oblige to respect the laws of thermodynamics and relativity and choose the inverse arrow of time, not the growth of mass=information but of entropy, writing:  **$-\nabla \text{Mass} \times +\Delta \text{Temperature} = \text{Constant}...$**

Likely he thought it was more 'interesting' for a mathematician to calculate such 'imaginary black holes' (the first name he gave to them), with its outrageous inverse arrow of time, which if time dimotions were not local but Universal and not multiple but a single arrow of entropy for the whole Universe, will indeed mean the black hole travels to the past and as he said you could enter through the black hole and come out and kill your grand-father.

But all those paradoxes are no longer relevant, as each 'cyclical time' clock is local, and so to travel to the past merely means in terms of the duality of entropy=death arrow and information=life arrow, to die.

ALL THIS SAID, we can now vindicate what is important to know about Hawking's formulae, when we respect the laws of thermodynamics with its proper arrow, and we introduce for a proper understanding of the formula, the expanded view of the scalar, 5th dimensional Universe.

So we translate Hawking's formula as yet another equation of 5D metric, and write it as:  $T(\dot{\$}) \times M(\dot{\delta}) = \text{Constant}$

In 5D mathematical physics it implies a constant growth of the mass of the black hole along the equation that relates the temperature and mass of a black hole:  $M=k/T$ , that is as the black hole cools down, it converts via the weak force, lighter matter into heavier quarks that increase its volume and hence its area.

With the very interesting result that we connect two parameters of two different scales of the 5<sup>th</sup> dimension, the thermodynamic 'human' and cosmological 'gravitational' scales.

How this is possible if scales are separated? Because entropy=death=motion without form does indeed transfer between scales. So the formula reads as  $T(\dot{\$})/\text{Constant} \Rightarrow M(\dot{\delta})$ , meaning our thermodynamic world in the presence of a primordial black star, if it were to appear at Earth in accelerators will indeed convert thermodynamic matter into pure entropic radiation, which will then evolve emerging as bcb mass.

So Hawking's formula explains the exponential growth of mass of a black hole as it swallows all the 'universal constants' of matter of the thermodynamic and quantum scales of the Universe.

Indeed, if we respect the laws of thermodynamics and Einstein, the weak force shall transform the light matter of our galaxy into heavy quark matter, through its triad of bosons, the W, Z and H particles. So Hawking's ratio of mass-temperature in black hole stars, describes the birth of a small black hole star, which as all systems of Nature show an enormous activity and rate of growth, in its initial stages, feeding on the energy that surrounds them – i.e. the placenta of our seminal seeds, the nest in which the parental system feeds the birds, the environment in which the new species becomes the dominant predator; in the case of the baby black hole the rich field of electromagnetic energy that surrounds it in stars where they are born by gravitation collapse and/or planets against which they collide or are produced by colliders.

It is then easy to understand the importance of the formula to interpret the genesis of black holes, the mechanisms of Nova explosions, and the way in which the energy and information of the lower scales of nature (the quantum and thermodynamic scales) emerges as mass in the larger cosmological scale.

Those scales are made of  $hc$  planckton constants &  $kT$  'Boltzmann constants of action, hinting to the solution of a fundamental question of physics - what is the relationship and meaning of those constants, and how can we unify mathematically the 3 fundamental scales of physical systems, the smaller quantum scale of electromagnetic charges, the human scale of thermodynamic molecules and the larger scale of cosmological masses.

So the way to properly write that equation in terms of the duality of entropy and information and the 3 fractal scales of the physical Universe is:

$$M_H \ 8\pi G \ \propto \frac{\hbar c^3 \text{ Quantum Scale}}{k_B T \text{ Thermodynamic Scale}}$$

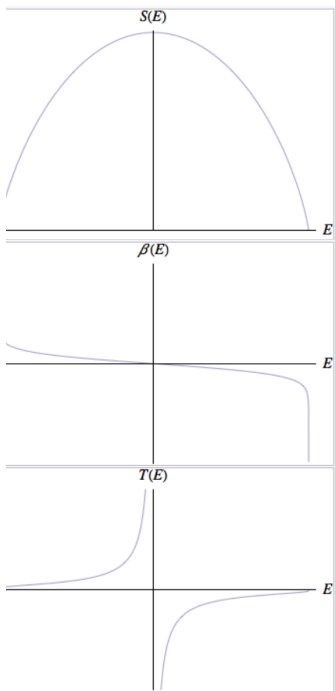
Where the event horizon is a discontinuum, which acts as an osmotic membrane, with 2 sides that have the same 'surface' area, so to speak – hence its equality: On one side you are inside

the black hole ( $8\pi GM$ ), and there is NO temperature there because heavy quarks have a superfluid perfect order (no hair theorem indeed, black holes are defined only with 3 parameters, angular momentum, mass and charge). And so we are outside the light space-time scale of electromagnetism. Which proves further on, that the black heavy quark star DOES not evaporate because it is NOT made of temperature. It is impossible to evaporate.

On the other side of the membrane, there is though both, light space-time and its 5D metric constant ( $hc^3$  in the numerator, expresses the 5D metric of light space-time for a given volume, whereas one-dimensional c-speed becomes in terms of the S=T symmetry a cubic distance hence a volume of light space-time) and  $E=kT$  in the denominator; also the metric 5D equation of the thermodynamic scale, because the black hole swallows and transforms into the  $\Delta+1$  gravitational scale both the  $\Delta^0$  Thermodynamic and  $\Delta-1$  quantum light space-time scales.

To understand this better, we should substitute the fraction by a product, using instead  $\beta=1/KT$ , a more fundamental parameter of the coldness of a system. Then we we write:

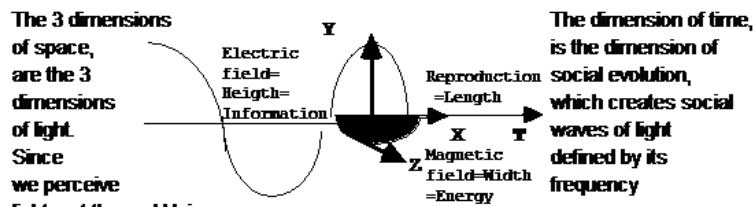
$$\text{Mass} \times 8 \pi G \ (\text{curvature}) = hc^3 \ (5D \ \text{space-time metric}) \times \beta \ (\text{coldness})$$



As  $\beta$  does not have a singularity at  $0^+K$ , it can cross into the perfectly ordered internal kingdom of superfluid BCB atoms of the black hole; transforming  $hc^3$ , the light space-time plane into  $MG$ , the gravitational world of 'negative temperature' and perfect order in its energy motion. Which is the modern understanding of thermodynamic temperature as the tradeoff between energy and entropy contained in the system, with "coldness", the reciprocal of temperature, being the more fundamental quantity. Whereas electromagnetic space-time Systems with a positive temperature will increase in entropy as one adds energy to the system, while gravitational black hole systems with a negative temperature will decrease in entropy as one adds energy to the system.

So in 5D the formula is the beautiful expression on how energy emerges into the mass scale.

This duality of a membrane is also perfectly understood in terms of Topological evolution, another key new discipline of 5D. Indeed, the fundamental theorem of classic topology states that a closed circle, any n-dimensional membrane breaks the continuum into an internal world and an external Universe, with 2 different surfaces, an internal elliptic, implosive, in-formative surface and an external hyperbolic, expansive, entropic geometry,



entropy, thermodynamic beta, and mperature as a function of the energy for a system of N noninteracting two-level articles.

And those are the 2 sides of the black hole: Internally the black hole creates pure information. Externally the black hole increases the entropy and disorder of our world just before it swallows it.

The key concept is the definition of temperature in terms of *the more fundamental concept of TT-entropy or potential number of disordered modes of a system*. As we add heat, to our  $1-\infty$  entropic w molecular world the disordered modes of energy grow as energy is constantly being exchanged among the various translational, vibrational, rotational, electronic, and nuclear modes. Thus a *positive temperature* corresponds to the condition where entropy,  $S$ , increases as thermal energy,  $q_{rev}$ , is added to the system since that constantly exchange energy between modes increase entropy.

. This is the "normal" condition in our molecular space-time world. However, inside the black hole, made of quarks, whose spins=angular momentums define its energy=mass, there is a single isolated mode – black holes have 'no hair'. So the isolated modes doesn't exchange energy with the other modes. This is observed also in lighter nuclear spins in a strong external magnetic field, where energy flows fairly rapidly among the spin states of interacting atoms, but energy transfer between the nuclear spins and other modes is relatively slow and becomes zero past the event horizon. Since the energy flow is predominantly within the spin system, it makes sense to think of a spin temperature that is distinct from the temperature associated to other modes. Negative temperatures can only exist in such a spin system, *which is quantized*, in a limited number of energy states. So as the temperature is increased on such a system, particles move into higher and higher energy states, which are limited paradoxically diminishing its entropy. So under the 'reversed definition of temperature in terms of 'statistical entropy', a function of the possibly microstates of the system:  $T=dE/dS$ ; the crossing of the event horizon means all other modes of energy are extinguished (as both molecular particles and light space-time cease to exist). And so what we find is high speed spins turning faster than light with ginormous mass, and perfect order, in very few quantized state.

Moreover the result *also applies to Lorentz transformations, as the event horizon crosses also the barrier of light speed*.

*But there is not 'magic' on it, because we have to understand such crossing as a discontinuity between planes of space-time. So light and matter do NOT really cross. They die and their TT-motion is absorbed at the  $\Delta-4 > c$  'quantum potential scale' ( $S_{xt}=C$ ), by the 'other species', the BCT atoms of the black hole to feed its spins of higher energy.*

*The barrier is NOT crossed because it is a death barrier; but it is crossed 'under the scale' of  $\Delta-3$ ; as the cow doesn't cross the barrier when you eat the hamburger; it is crossed 'under the  $\Delta-2$  scale of amino acids in your stomach. Since SpaceTime,  $S=T$ , present organisms are self-centered in a given  $\Delta^0$  scale and do NOT cross barriers. Only its TT-pure motion (our definition of entropy in 5D as it can apply intuitively to all science, different from 'thermodynamic' and 'statistic entropy',  $dS$ , which are the quantitative concepts of Physics, conceptually related to TT, in the sense that TT, the state of pure motion is also infinite in entropy as it can potentially recreate any system in existjence).*

*Thus the solution of negative temperature accepted recently by mainstream science, which we proposed for two decades in our articles on thermodynamic of black holes (during my years of activism against CERN, which had too much media exposure for physicists to take seriously 5D, in 'defense' of their livelihood) IS also the solution to negative energy and the door to the 'intergalactic world of faster than c-speed repulsive 'electromagnetic gravitation'; which is obviously faster than the limits of speed within the galatom – as photons are faster than the atomic and electronic particles of the atom.*

So in a more detailed version of  $E=Mc^2$ , Hawking explains why the Universe is fractal, with discontinuous membranes between the entropic side of the Universe (electromagnetic-thermodynamic membrane) and the informative gravitational side that in-forms reality (mass-black hole side). And why there are 2 'geometrical description' of space-time (elliptic curved space-time of Einstein's gravitation, made of accelerated vortex like

informative mass clocks) and the hyperbolic, entropic, expansive description of quantum physics. Which are 2 different discontinuous sides of the fractal universe that balance each other and must not be unified in simple terms because both are needed to balance the Universe.

On the side of mass, the equation is identical to Einstein's Relativity tensor, that describes a gravitational world:  $8 \pi G$  Mass. Yet unlike in Einstein's tensor, there is no energy-entropy, only the other 2 elements of Einstein's equation:  $8 \pi G$ , the gravitational space-view or curvature of the black hole and its temporal Mass view, the accelerated vortex of gravitational time – again our familiar 5D metric:  $SxT$ .

On the other side, above the equation for quantum space-time where  $h$  is the angular momentum of its clocks of information (so quantum systems code with  $h$ -Planck quanta its informative spin and form) and  $c$  is obviously the speed-distance of space, as we see light space. Space is made of light, as impressionists painters realized and the relativity principle that cannot distinguish motions from distances, or the spatial expansion of intergalactic space homologous to the red-shift elongation of light space, proves:

Our human electronic mind perceives light-space, through its plancktons,  $hc^n$ , the minimal quanta perceived by an electron:

We see light space as 3 perpendicular Euclidean dimensions. That is why our mind is tridimensional: As the product  $hc^3$  is the 5D time-space metric for our electronic space-time made of  $h$ -angular clocks and a  $c^3$  volume.

It is then evident that there are different minds' geometries according to the forces of space and clocks of time each mind has. But still we can measure its 'relative' curvature in Non-E Geometry with a simple parameter,  $\delta/\xi$ , which is the Gaussian/Lobachevski ratio of curvature that defines each type of mind.

So in terms of the specific electronic mind's spacetime geometry which is NOT the same than the bidimensional photon's geometry, or the quark geometry inside the black of the quantum world, the ratio  $\delta\xi/\xi t = h/c^3$ , is the 'ratio of curved cyclical information to lineal distance-speed of the human mind. That ratio  $h/c^3$  is so small that we must conclude an electronic mind processes very little information and has according to Lobachevski's parameter of geometry a maximal flatness. Indeed, we see the Universe as a flat Euclidean World. Finally on the denominator we have the thermodynamic scale that 'breaks and divides' the numerator; meaning that the black star absorbs light space-time ( $hc^3$ ), converting it first into entropic temperature (KT) - hence the ratio; and then it moves it to the other side of the membrane, evolving it into  $8 \pi G$  Mass.

### **Conclusion. $\Delta$ -scales in physics. The little thingies and the big busting guy.**

Reality is a scalar system of fractal organism of topological space and cyclical time, akin to the concepts of information and energy of physical sciences.

Each part of the fractal Universe is composed of smaller parts, but all are ruled in a given organic 'domain' which can be traced around 3 planes of space-time,  $\Delta \pm 1$ , by a set of metric equations,  $S_i \times T_e = \Delta^q$ , self-centered in the plane we consider to be the commanding natural scale of the organism. What this means is that the lower plane will be time-like, with faster cyclical actions of hyperbolic nature and larger density of information; the upper plane will be space-like, with less information and slower cycles; and both will merge its spatial information and temporal energy into the intermediate  $\Delta^q$  state.

Those scales that concern physics are thus  $2\Delta \pm j$  scales outside the human world/organism; the quantum scale and the cosmological scale, and...+ 3  $\Delta \pm 1$  scales that concern us, the scale of mechanics above, the electric scale of our mind-consciousness and the lower scale of thermodynamics.

All of them follow the paradoxical inversion laws of scales, the hierarchical laws of energy and the inverse laws of the arrow of information, Such as information increases in lower planes of maximal individual form and freedom and diminishes in larger scales of more continuous membrains and lesser freedom. So the larger membrain is curved, elliptic and traps the smaller scale, which is quantum, expressing all its potential futures in

the short terms of its existjences, but becomes bend and reduced in form and motion as it ascends and emerges into lower scales.

So we can study from the 3 points of view the structure of physical systems or any other system. Today is customary to 'deduce the larger' scales, as 'limits' (of lesser quantity of information) of the lower planes. So in professional books of physics, the first laws to be considered are those of lower planes, whose 'limit' as we loose information of the discrete, multiple free paths of its particles, emerges into a new scale...

But this does not mean we cannot establish from the top down a completely different form of organization that does work, exist and impose its laws of conservation of time-energy on the 'feisty', little thingies below by the harsh method of suppressing its energy and hence its information, with larger fields and longer time cycles.

Only that the LANGUAGE in which this other causal order is established is not that of the little thingies with its 'social numbers' of scale, and cyclical patterns of time, in hyperbolic networks, the but the brutish stick and carrot method which pedantic scholars so much despise and deny. The big guy with the big busting toy...

A few examples will suffice. The little thingies we call nitrolife species, busy busy radiating on the surface of Earth are brutalized by the big stick of magma veins of molted gold and iron surfacing in extinction periods, reinforced for good measure by a huge rock coming from sun-system sky, which might be ultimately the origin of those plumes of magma, as the body reacts to the 'beating' of the sun, sending a flow of vaporizing heat from its central heart, as blood flows on a body tumefaction by the hitting... And then we do have those harmful 11 years magnetic holes on the skin of the sun, tuned to the 11 years burping of the Sagittarius swarm of black holes. And so for this stick process of long time, simplifying control even if we can go down to the details, an organic view of Gaia, life, the Solar system and the galaxy does the explanation in system terms. The larger brutish plane of existence you might call GodoG, as used to do in my simplifying mystical texts is real, and as much as you little thingy would like to be sooo important and colonize with your microbial, faster plague the galaxy as nerdy NASA and Silicon Valley moguls pretend, hold your bollocks man cause you shall be evaporated soon unless you learn to respect the big guys of the galaxy, specifically in this DNAge the pretension of physicists to make baby holes on Earth.

Understand this. Respect the big guy and his stick because while his mind seems poorly endowed to you, he is a nested Universe with an equivalent  $\Delta$ -j level more complex than your  $\Delta$ -j-x touch-base scale.

And so between the quantum mathematical complexity and the larger big busting sticks there is us, nitrolife of thermodynamic activity with electric minds, mechanically pegged to the membrain of mother Earth. And here we do have 3 scales at play, mechanical work, where energy-time of human nature was first defined, electrical flows in between and thermodynamic molecules on the lower heat.

Those are all the scales of matter that matter and we study in different papers. The one dedicated to the big guy stick organic description is thus paper on cosmology, focused on the organic properties physicists ignore, but to show that 5D does much more than that, the last paragraph r=evolves our mathematical understanding of the thermoydynamic of black holes with proper explanation of Hawking's formula, and before that we unify quantitatively the two scales of masses and charges.

## HYPER-UNIVERSE.



In the graph the Fractal Generator in a single plane of the Hyper Universe, whose size and form as a macro-ensemble of galatoms is impossible to determine beyond its perception as a dense gaseous/fluid state of atoms or most likely antiatoms (open to argument as most mass is in the halo, as if galaxies were antiparticles) communicated with cosmic electromagnetism (Dark energy). Inside the galatom (below) we can resolve clearly the  $\Delta$ @st symmetry of the 3 scales of matter, its 3 families of mass and its 3 topologic regions, self-centered into the gravitational black stars minds, which act as the DNA of the 'galacell' (max. biological p.o.v.) It is thus metaphysics and speculative science to try to inquire beyond some details the structure of the  $\Delta\pm 4$  plane, which in the nested lower Universe likely flanked by quantum potential fields of neutrino  $\nu > c$  background space

### Faster than light speeds in the lower and larger $\Delta\pm 4$ planes of the nested Universe.

Since the Universe's scales are infinite, there must be a lower scale, which according to  $S \times T = K$ , will have less 'temporal information', hence more Spatial speed-distance, allowing the 'action at distance' or entanglements of particles through its quantum potential, or  $\Delta-4$  plane, likely made of faster-than-light lineal tachyon neutrinos, which carry only trigonometric information on the angle and distance of the other photon., prior to the exchange of more complex information between particles through a light wave.

So particles first localize and entangle each other through the sharing of neutrinos and then 'keep' waving its communication through light waves (opening the possibility of a neutrino theory of creation light, put forward by Broglie, which needs two inverse neutrinos travelling in the same direction) and still does NOT break 4D relativity, since they don't transmit in-form-ation, form, only 'still distance', position.

Another way to describe such faster than light speeds, is then considering the parameter of time as a parameter of information; then:  $V=S/Information$ , and so a particle that carries less information than light, will be faster than light. So if  $C=S/l, >C S/<l$ , which is the case of non-local quantum potentials.



C-speed constant is the constant of reproduction of information in the 5 D lower scale of light space-time, the background scale of the galaxy:  $\$(c) \times \delta(h) = C$ . As such all species within the galaxy have that maximal speed of reproduction of information, spent in the

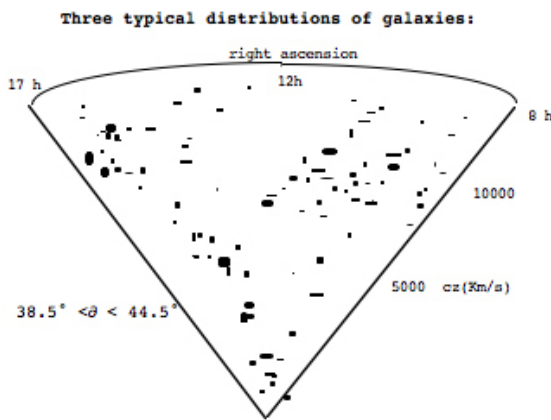
recreation of the mass-energy of the being that reduces the speed from the simplest information reproduced, light itself. But the nested Universe implies that the  $j\pm 4$  plane of the Universe must have a constant of speed (of reproduction) higher than its smaller  $j-3$  galaxy. Hence we find faster than c-speeds outside the galaxy in dark energy confused with an expansion of distance-space, according to the Galilean paradox:  $S\text{-distance}=T\text{-speed}$ . It

follows that the proper *interpretation of quantum physics is Broglie>Bohm's realism as its main hurdle, to explain entanglement and quantum potentials faster than lights is resolved, as the limits of our 'Space-time' scale. Some proofs:*

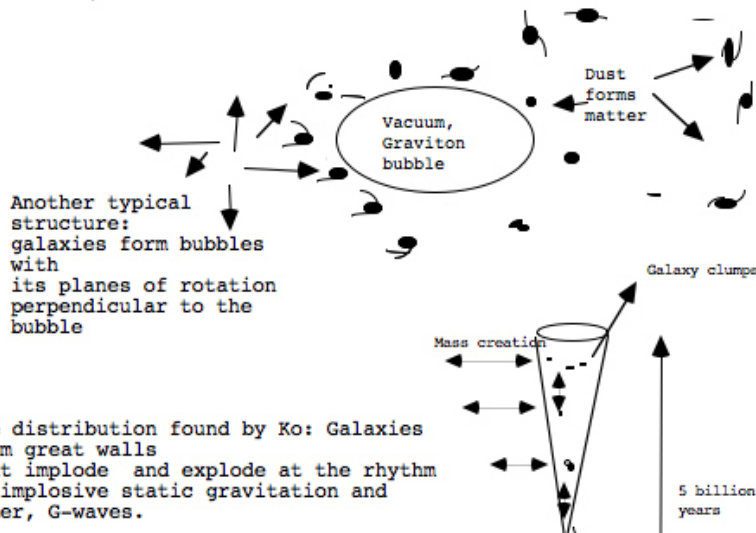
In physics as time clocks are clear rotational spinning particles, it means that smaller systems turn faster in time; with no limit of speed, reason why for example an electron, when it shrinks from an orbital into a point-particle with 1/2h spin, to have the huge magnetic field we measure it must turn faster than light speed (Pauli). And a black hole, much smaller than a star turns much faster, at c-speed in the event horizon and likely if it is as Einstein wanted a 'quark star' it will be made of particles that turn faster than light (top, bottom, charm quarks).

So because 5D is made of layers,  $S \times T = K$ , with different size from the smallish faster world of rotary particle-points to the much larger slower rotary galaxies; from the short lineal distances of our motions through the c-speed=distances of the galaxy, and beyond in the faster than c-neutrino background of the Universe, by the principle of correspondence when we reduce to the Galactic layer-scale of reality made of a background radiation of c-speed-distances; this background radiation is indeed a fixed c-speed-distance, and it is what we perceive with our electronic eyes. And all what is within that galactic womb, must go slower than c-speed-distance, as you go slower than the river flow that drags you.

**THE HYPERUNIVERSE: SPATIAL SYMMETRY**



The galaxy distribution at redshift distance  $cz < 12000$  Km/s and limiting apparent magnitude  $m \leq 15.5$ . Big points are  $\Sigma$  of galaxies. What is relevant is the fact that in  $6^\circ$  deep in declination galaxies are clustered with such density. While away from the planar sheet there is a vacuum (Graviton universe)



Now, all this said we can after being the devil's advocate against the big-bang, if any believer is still reading, which i doubt it, and consider that perhaps, indeed, there is a higher scale beyond galaxies, which do respond to the big-bang cosmology and forms a larger scale of physical systems, obeying at a higher speed of space and denser speed of angular momentum in its black hole vortices so how it will look the whole? As its parts in a fractal Universe that repeats its games of existence.

**5D scales: Walls: societies of galaxies.**

*Yet, the beauty of all this is how much rich on meanings and paradoxes and questions to explore is 5D physics compared to the pedestrian simplex analysis of the previous paradigm.*

So before we go into the big bang polemics, I want to consider a bit more of other themes of 5D cyclical time space astrophysics. And how it differs from lineal space-time astrophysics and enriches our science for generations to come.

We shall call its birth the 'little bang', to differentiate it from the metaphysical big-bang of a supposed larger,  $\Delta+4$  cosmic scale which we will study after wards. Now as it happens, in a fractal Universe the little bang is quite similar in ages, and timing to the big bang, as it is the cyclical life and death of the central black hole of the galaxy.

## The Universe is a spatial organism.

Any Fractal point, according to duality, can be described in space as a fractal point with a relative Entropy body and an informative center, communicated through 2 forces/networks of Entropy and information. And it can be studied in time, through its 3 evolutionary ages, between life and death, as its Entropy becomes curved by time and increases its form, creating in the case of the cellular Universe, new informative particles and galaxies.

Though both perceptions of the Universe are correct, cosmology ignores the organic, spatial description of the Universe, which completes the evolutionary, temporal vision, obtained through light instruments - since it cannot see dark Entropy and non-local gravitation. Yet if we were to perceive that Universe with the instantaneous, non-local gravitation that reaches its limits, it will seem as a complex st-point structured by an external membrane (the wall of fire), an internal self-reproductive space of galaxies and an informative hyper-top quark Hole center (the great attractor?), all coordinated by the non-local forces of dark Entropy.

*Recap.* The physical Universe is structured in 3 scales of reality, the quantum world of electromagnetic forces and the gravitational world of masses. Both can be modeled with the isomorphisms of super-organisms, whereas the electromagnetic forces/planes act as the Entropy network of galaxies and atoms and the gravitational forces/masses as the in/formative force that balances the entropy of electromagnetism, creating a complex, organic Universe of eternal motions and balances between informative gravitation and entropic electromagnetism.

*If you ask me what do I think the hyper-universe is, in this smallish region of its infinite galatoms, I would dare to say just I have no idea, but the local region seems to be an entropic zone of gaseous diatomic molecules; our couple being Andromeda... As we cannot see the structure of Saggitarius, is not very clear if we are bit more complex than a simple Hydrogen molecule... the orbital observed above and below the center of the galaxy though strongly suggests a D-orbital, might just be a nitrogen molecule?*

**Conclusion.** The 5D metric of the fractal Universe puts in relationship the similarity between atoms and galaxies, to expand both within the nucleus of the atom and outside the galaxy as an atom, our modeling of reality.

It doesn't contradict 4D that corresponds to its limit in a single plane of light space-time, *background space-time* of the galaxy, which our electrons see in stillness to measure reality entangled with other electrons. The renewal of astro-physics with the use of the 5D formalism and its 3 main discoveries, the **scalar, organic** Disomorphisms of reality and its 5 Dimotions=forces, the **cyclical** nature of time and its multiple planes of **fractal** space that gift reality with its bio-topo-logic properties is a task which will take generations of researchers to exhaust, as the last big r=evolution of science did (the 4D and quantum paradigm), when finally humans accept the paradigm change.

*Nt. 1 We call both the galaxy and the Universe a galacell, or Univercell, as opposed to a galatom or Unitom, NOT because this is the 'real thing', as all fractal scales of the Universe are 'similar' but NONE is identical (though we might argue the identity between galaxies and antiparticles, which would create a ternary identity scale, in 'metaphysics', part of philosophy of science, beyond physics). But because according to epistemology, as all scales of reality are similar, obeying the disomorphic laws of the 5<sup>th</sup> dimension, either in its topological geometry or existential algebra, derived of the 'Function of Exi:stjence', its metric equation  $[C=Max. S \times T (s=t)]$ , the maximal information is obtained in the scales closer to us. So we observe maximal complexity in the cellular scale, which we might consider is similar as all scales have the same volume of information, per unit of form, in the atom and the galaxy. Thus it is more proper to presuppose that if we had all the information about the atom or the galaxy, it would resemble a cell.*

*Nt.2. 13 is the number of 'bad luck' as black hole evaporation is a dogma of entropy only physics. So accelerators aim to re=produce them on Earth but if 4D Einstein's & 5D So:To's formalism are truth, they will evaporate us*