

# QUANTUM INFORMATION Vs. RELATIVISTIC DILATATION: A SUMMARY

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## Abstract

In Summary, the relativistic measurements of Time at different speeds, are therefore **empirical and unquestionable**, but as it was **incorrectly postulated** over 100 years ago, they are not due to **supposed dilations** of the Time Unit, but rather due to the **superposition/ irruption of another "Time (of quantum or pre-material origin)"** which is the **variable and dilating** component of the externally measured/observed total Time. Its variability, depending on the speed of the system, is what explains the LORENTZ Transformation. With this, results a real and **hemi-symmetric** Time, which to begin with already resolves the basic contradictions of Relativity. With a LORENTZ Factor **not** scalar, but a **function** of the interacting masses, the two Relativities, special (SR) and general (RG), are **harmonized**. **Five dimensions**, three of the Space, **but two of the Time**, make it possible to **resolve** the current inconsistencies in Physics. The **reasons** for this century-old error are explained.

## REAL HEMI-SYMMETRY OF THE UNIT OF TIME, VERSUS THE UN-REAL RELATIVISTIC SYMMETRY.

Science has always progressed by **accepting errors**, and **correcting them**. Although many times with a strong opposition from the same scientific community, as the case that I expose.

The hypothesis called "Time dilatation" at high speeds, proposed more than 100 years ago to explain some consequences of MAXWELL's equations at high speeds, should be made clear to the reader that it refers strictly to **the dilatation of the Unit** with which it is measured the Time, and **not** to the dilatation of the result of the measured Time, since if there is a dilatation of the Unit, the measured Time is just contracted/ delayed/ retard. For example, if a ruler were to be expanded more than double, until the centimeters became like an "inch" [=inch=2.5 cm], the new measured values would be 2.5 times smaller; if it dilated 100 times, it would be like confusing centimeters for meters; etc.; etc.; etc. The merchants rigged the scales (that is, their unit) to sell less for more. Subsequently, said time "dilatation" could be observed by the progressive **delay** of the clocks in faster systems (aircraft, Experiment by HAFELE KEATING, 1971), referenced to the "static" clocks, at rest, of the Earth. That "the twin that travels more fast, ages less".

When gently starting a train, anyone has thought that it is the station that is going backwards. And it is true (regarding our train). If the researchers had done the calculations inside the planes themselves, and not at their University (**why not?** as Ian McCAUSLAND, an emeritus physicist, put it), reversing the perspective of the comparison between the two systems, not referring to the static and huge Earth, but referring to the mobile and smaller system (aircraft), it turns an **absurd and irresolvable** "theory", because the opposite happens, a contraction (of unity) of the Earth's clocks, which are therefore **advanced** (compared to the airplane clocks, which are delayed).

This and many other inconsistencies have generated **continuous debates and paradoxes** (which for convenience they try to ignore) why with this hypothesis of the surprising dilatation of the unit (then it is no longer a "unit") the "theory" that has resulted ("Special Relativity") forces to accept that the comparisons of time in one perspective or another are "**symmetrical**" (the "dilatation" is always fulfilled, no matter where you look at it), which **never** happens in reality (nor did it happen in said experiment), because if a clock A delay with respect to another B, the latter B can

**never** simultaneously delay with respect to the first (symmetry), but **always** advance (called in mathematics, tensor behavior of asymmetry/ "hemi-symmetry"/ **reciprocity** [as the "debit - credit", as the "purchase - sale"]).

## A NECESSARY UNDERLYING-QUANTUM INFORMATION IN PHYSICAL PROCESSES

All this is due to the fact that more than a century ago **a necessary underlying Information in physics was ignored**, underlying information that, on the contrary, is accepted in the remaining natural phenomena, whether biological (genetics) or psychic (psyche, unconscious).

An underlying quantum Information **whose Processing** allows to govern the basic physical phenomena, so that there can be a **strict compliance** with the **intrinsic Laws** of physics by matter (laws that science tries to simulate and approximate with more or less precise mathematical laws). And what is more important, this Processing **recovers the necessary causality of physics**, justifying the order and reiteration of all behaviours.

An underlying Information that corresponds to the quantum scenery, today totally **unquestionable** due to phenomena such as "Entanglement", quantum Computing, or due to quantum phenomena in general.

The Processing Time of said quantum Information is **totally empirical**, since we must associate it to the modifications of the LORENTZ Transformation, instead of the supposed and erroneous modifications of the Unit of Time.

For this reason, this new and correct hypothesis does **not contradict** any of the millions and millions of empirical results available, but it does question the theoretical formulation that has been carried out until today. And in turn, it brings **notable positive consequences**, as we will see.

A ignored Time that from the outset allows the **necessary and real hemi-symmetry** in time comparisons (I repeat, if a clock A delay with respect to another B, the latter B advances with respect to the first A). And, precisely, it is by ignoring it that it is **mistakenly** thought that due to the increase in the speed of a system, what is dilated is the traditional/classical unit with which we measure Time. That is, to the Time measured by the clocks of material dynamics, which is **fixed**, the Processing Time is **superimposed/ inserted/ added**, which is **variable** depending on the speed of the system.

It is a "Calculation or processing Time" that, logically, **increases** with the **increase** in speed of the system, due to **increasing** the trajectory and therefore **increasing** the interactions to calculate/ controlate in a same "Time of material dynamics", so that this ignored component is a **variable component depending on the speed**, and that while it intervenes, matter continues its course but without acting as such, like someone who **sleeps at night**, or **winters**, or is he **hypnotized** (and the rest of the world is still active). For this reason, in the **fastest system**, the clocks mark **less** time, because while the Processing Time acts, the material dynamics, clocks included, is immobilized/ frozen/ wintered: "the twin that travels **more fast**, ages **less**", his clock is **slower**, it **delay**. The still twin, at rest, requires **less** control, **less** Processing Time, your clock is going **faster**, it gets **advanced**. The hemi-symmetry of the externally observed real times is fulfilled.

If we replace an alleged **unjustifiable** dilatation (because of its serious contradictions already expressed), and in its place the logical emergence of a longer control processing time is accepted due to the increase speed, then, in addition to resolving contradictions, many things are understood\*.

\* I insist, in a "static" system, at absolute rest, all time is material time. In the fastest "mobile" system, part of the time is due to higher processing, due to its higher speed ("hibernation"/ "freezing"/ "hypnosis" periods due for a greater control), so material time is less and it mobile clocks, which are materials, mark less time (for this reason we age less, all material dynamics are slower, and at the same time thus the obligatory hemi-simetricity/ reciprocity is fulfilled). Thus, in the atmospheric Muon that forms in the stratosphere at a height of more than 10 km and travels close to the speed of light "c" (0.995c), its material time is !!only 1/20 part of the total!! (by the LORENTZ Factor, experimentally proven and unquestionable), the remaining 19/20 are processing time (periods of "hibernation" for greater control of its extraordinary speed, almost "c"), so to fulfill its life as matter it needs 20 times longer time than the Muon at rest (2.2  $\mu$ s [millionths of a second]), or what is the same, it takes the time observed on Earth (which is 2.2 x 20 =44  $\mu$ s), and at said speed of almost "c " can travel a distance 20 times greater (13 km, and reach sea level, ROSSI – HALL atmospheric Muon experiment, 1941).

Ptolemyism is also avoided if a new interpretation is given to the LORENTZ Transformation, with a **non-scalar but functional Factor that inversely involves the value of the masses** (incorrectly ignored until today). It is otherwise inapplicable, for example, to a "Binary star system". Or when one day two atomic clocks are correctly compared, one on Earth and the other on the Moon, from the earth the expected LORENTZ Factor **will not be measured**, but reduced by 1/84 (due to the ratio of both masses). And always with the **contradiction** due to which this document has been started, that from the Moon Time unit will have **contracted**, not dilated.

Thus, he **harmonizes** the two Relativities (the "special" SR and the "general" GR that are still in conflict today, giving a more correct interpretation to the LORENTZ Transformation), and harmonizes these Relativities with the Quantum; **explains** the HEISENBERG Principle (see "Quantum Information Processing Time Vs. Relativistic Dilatation: a necessary Change " for a detailed explanation), or "Entanglement", or Quantum Computing, or the "dark", etc., etc., etc., **avoiding** all the paradoxes, inconsistencies and inexplicabilities accumulated by the hypotheses of current physics since the MAXWELL equations ("hypotheses" not "theories", due to these repeated inconsistencies and contradictions).

THERE ARE NOT ONLY 4 DIMENSIONS (THE CURRENT AND CENTENNIAL "SPACE-TIME"), BUT 5 DIMENSIONS.

Said Information processing **implies another component** of Time **that is superimposed** on the Time required by the dynamics of real-materials phenomena. A new and independent Unit, a new and independent Dimension. Its nature is quantum, its origin is **non-material, pre-material**.

This, in turn, explains the omnipresent photon, **!!without mass!!** (no matter how much effort has been put into finding it) but with energy, which is an example of said **pre-material stage**, of information and energy **without matter** (see "Delocation (non-locality), Immediacy (action-at-a-distance), Processing Time, and Singularity."). The photon already existed, then, before matter appeared, so, by the way, said information processing, also independent of matter (for example, manifested in the "Entanglement"), was what it could manage the energy of photons for the emergence of matter (and avoids the current **non-causal and creationist hypotheses**).

Consequently, the physical magnitude of measured Time, must be **split/ unraveling into its two components** (current Time is strictly a **double unit**):

- the real/material "t<sub>m</sub>" (a strict unit, **fixed**), and
- the virtual/ informational/ processing "t<sub>p</sub>" (a **variable** time superimposed/ inserted on traditional material time),

and in coherence, **all the relativistic/ non-classical equations of the last century must be correctly reintegrated**, since the traditional "dt" is strictly

**dt = d(t<sub>m</sub> + t<sub>p</sub>)**, with t<sub>m</sub> **fixed** and t<sub>p</sub> **variable**.

The sum of both is the one measured by an **external** observer, t<sub>m</sub> is the one measured **within** the system.

Any 4-dimensional geometry (be it the well-known "Space-Time" or any other) is **incomplete and allows us to understand its limitations**.

If we except the domain of classical physics, it is **incorrect** to integrate high speed phenomena with respect to "dt", as has been done **incorrectly** for the last 100 years. Since the experiments have always referred to the huge Earth with respect to tiny particles or objects, as happened in antiquity and up to the modern age, it is a new Ptolemyism.

After more than 100 years of errors, it must be insisted once more, that said component of Time due to said Processing of the underlying/ quantum Information, does **not imply any contradiction** with all the millions and millions of empirical results incorporated by physics until today. I insist, if what has been explained has been understood, **in all the millions of experiments already carried out**, what has been measured and observed and its results, it is **neither** questioned, **nor** contradicted by what has been exposed. The empirical is unquestionable. What varies, decreasing, is the material time lived by the matter of the fastest system, due to the **greater** moments of "hibernation"/ "freezing"/ "hypnosis" (ergo, without material dynamics) in which said system is **more** intervened by the **greater** control (superimposed/ inserted) of Processing Time.

And, **finally** (as B. Roy FRIEDEN already tried), the **information in the equations of physics is implicated empirically and numerically**.

At the same time, reality is explained with a **strict, certain, causal theory, without contradictions**.

HOW WAS SUCH A BASIC AND TRANSCENDENT MISTAKE POSSIBLE?

Because, unfortunately, at the beginning of the 20th century, a premature justification was accepted and imposed (variable units according to the speed of the observer), a few years before to other later discoveries in Physics that made up the so-called "Quantum Physics", with even more surprising implications, as the Information (SZILÁRD, 1922), the Virtuality and the Immediacy (misnamed "action-at-a-distance"), things inexplicable from the traditional material and time perspective that we know, as for example happens with the still unexplained "Entanglement", which has already been the subject of the 2022 Nobel Prize in Physics, but exactly 50 years after its experimental verification, a half century late, which **demonstrates the enormous reluctance of physics** to accept the underlying quantum Information.

We must also think that all this happened many years before the extraordinary current computer development, which already allows us to understand that information can **govern anything** (as we have known for 70 years that life is governed by support of **genetic Information**, or before, that our behaviours it supporting whit the **Information of our psyche and its unconscious**).

Not even with Quantum Computing based on things as minuscule as physical particles has this serious ignorance been raised. For this reason I always say that physicists implicitly **presuppose a capricious and pre-scientific God** who put these impressive calculation capacities in the Particles so that for 14,000 million years they would be **absolutely useless**, until men, "made in their image and likeness", discovered them and could start playing and entertaining themselves with that.

In "Delocation (non-locality), Immediacy ...", other reasons are provided. Also in "Quantum Information Processing Time Vs. ...", with references to emeritus physicists such as ESSEN (discoverer of the atomic clock), SELLERI, McCAUSLAND,..., or mathematicians such as GÖDEL ("Rotating universes").

## REFERENCES

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