

The theory "system of absolute numbers" (SAN)

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I should still like to emphasize the bearing of the great lesson derived from general relativity theory upon the question of physical reality in the field of quantum theory. In fact, notwithstanding all characteristic differences, the situations we are concerned with in these generalizations of classical theory present striking analogies which have often been noted. Especially, the singular position of measuring instruments in the account of quantum phenomena, just discussed, appears closely analogous to the well-known necessity in relativity theory of upholding an ordinary description of all measuring processes, including a sharp distinction between space and time coordinates, although the very essence of this theory is the establishment of new physical laws, in the comprehension of which we must renounce the customary separation of space and time ideas. N. Bohr [1 page 702]

Abstract

The presented theory is the result of a non-standard analysis of models of infinite sets.

Based on this analysis, a new author's terminology and the formulated concept of absolute numbers were introduced (AN). As the most appropriate and complete description of the theory, the terminology "system" was chosen, from the general theory of systems [2].

As a result of the consideration of mathematical models as systems, these models were extrapolated as full-fledged physical systems, their roles and mechanisms for the formation of physical reality

Thus, the theory of "systems of absolute numbers" acts as a concept describing the general physical mechanics of the reality of our universe, with some generalizations .

$0x \times \infty x = 1x = X$ The formula for the physical formation of reality.

Methodology

- Includes the analysis of all objects of reality as systems.
- As a consideration of starting systems, the analysis of mathematical models and the representation of numbers as physical systems is performed.
- Representation and analysis of all mathematics as a physical system of reality
- Extrapolation of the analysis of the physical system of mathematics to the laws of physics and the physical picture of the world.
- Introduction to the author's terminology.
- Modeling of the theory of physical reality and the mechanics of reality formation.
- Revision of the concept of the numbers zero 0 and infinity ∞ , in the "physical picture of the world", based on the conclusions of the methodology.
- Extrapolation of theoretical conclusions, verification of theoretical predictive power
- Presentation of empirical experiments, confirming the conclusions of the methodology.
- Construction of hypotheses, that equally correspond to the presented theory.
- Formulation of a concept that allows you to confirm or disprove the theory SAN.

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1. Non-standard analysis of absolute numbers (AN)

Non-standard analysis AN – It is an analysis of mathematics and its components, as full-fledged physical systems.

The term "absolute numbers "(AN) is introduced as a differentiating concept of numbers, from the point of view of the physical picture of the world, relative to the classical representation of numbers".

Absolute numbers – this is the representation of any number as a physical system (object) of reality. AN is extrapolated to any object of reality, as an "AN system".

As a starting model for non-standard AN analysis, we will analyze the mathematical expression $0 * \infty$ from the point of view of mathematical analysis, such an expression has an indefinite solution and can be written as $0 * \infty = n$

Where "n" - is any number.

For non-standard analysis AN, we model this expression on a segment of one-dimensional space, pic.1.



Picture 1

On the resulting model, we mark the points of the segment ON: O₁, O₂, O₃ etc.

So, the segment ON consists of an infinite number of points, $O_1 + n$.

Represent a segment as a system "ON" and each point of this segment as a state of the system ON.

Also represent each point as a segment, whose distance is zero. As a model, represent a point O₅, as the segment O₄O₆. The length of such a segment is zero.

Get the conclusion, a line - is the cumulative set segments, lying in this straight line, whose distance is equal to zero and being the points of this line.

Also state, that the system is a cumulative infinite number of its states.

From the obtained conclusions, our analysis, denote expression $0 \times \infty = n$ as unacceptable. This expression does not indicate whether the system states belong to this system. Let's denote this expression by belonging to this system and get an expression for any system: $0x \times \infty x = 1x = X$.

We apply this expression to the segment ON. Denoting that the unknown $X = n$, where "n" is the length of the straight line. Get the expression:

$$0n * \infty n = 1n = n$$

Converting the expression:

$$0n = \frac{n}{\infty n} \quad \frac{n}{\infty n} * \infty n = n$$

State the conclusion that, unlike the classical mathematical model, the transformation of expression " $0 \times \infty$ " and its extrapolation do not cause contradictions and retain the meaning of the mathematical operation.

Thus, by the method of non-standard analysis AN, obtain the mathematical certainty of the number, denoted as "X".

Extrapolate this method to the algebraic square root of the number four: $\sqrt{4} = (+2; -2)$

At the same time, we get the uncertainty of the origin of the number 4. It is not known whether the number is the result of a mathematical operation $(+2) \times (+2)$ or $(-2) \times (-2)$.

The whole solution is transformed in the case of uncertainty clarification, $\sqrt{4} - 2 = -2$ where "x", the uncertainty of a number, is defined as "-2".

If replace the number x with $\sqrt{4}$ in the formula $0x \times \infty x = 1x = X$, then we get the expression:

$$0\sqrt{4} \times \infty\sqrt{4} = 1\sqrt{4} = (+2; -2)$$

Here it should be understood that in the concept of AN, the absolute number X can take not only one value, but also a set of values that do not correlate with each other.

Example: $X = 1, -3, n, (12,33]$.

In the AN concept, the range of these values for the absolute number X (absolute unit), represented as a complete system, is considered as an analogy of mixed states [3 Articles with a letter "C"] [33], for the system AN "X". Such values of the absolute number X, must be part of a single system, which is represented mathematically as a unit and in its full form is denoted as "1X".

This concept of an approach to numbers, quantities, their representations in the form of physical systems and extrapolation of conclusions to the physical picture of the world is called the concept of Absolute numbers. The concept AC also tells us that the numbers represented in classical mathematics — are only the relations of dimension and the calculation of these dimensions. These operations are possible only with strict compliance with the rules and regulations, within the framework of a system called "classical mathematics". It is possible to ascertain the imperfection of classical mathematical techniques.

Will define the concept of the number $1x$ in the framework of the concept AN:

$1x$ "Absolute unit" – a number or set of numbers that are taken as a unit and represent a system. Any number, value, or series of numbers can be represented as an absolute unit, and will be a set. It is written as either $1x$, $1A$, or $1Ax$. Where "X" is the "known" for uncertainty or the dimension " $1X$ ".

Incomplete system:

$0x \times \infty y = 0z$ – an expression that says that if $\infty x - 0x = \infty y$ the number of states of the system is not enough and $\infty x \neq \infty y$, then the system will not be valid (complete) i.e. it is converted to the value $0z$ - where $0z$, an uncertain, incomplete system. At the same time, an incomplete system can be a system, a subset of system $1x$. I.e., $0z$ can be a full-fledged subsystem, or it can be a value of "0" for system $1x$. At the same time it follows the statement that: $\infty x - 0x = \infty y$. Where ∞y , is a conditional indefinite infinity, which is the result of subtracting from infinity ∞x any value included in it.

At the same time, subtracting the state of the system from the system can be critical and non-critical. For non-critical subtraction, $0x \times \infty y$ will take values included in the allowed values of the system $1x$,

$$0x * \infty y = 1x$$

Thus, the system of the number $1x$ can be understood as a system that accepts any of the values given to the system. That is, if the values of the system $1x = 1,4,5,6$; then with values 4 or 6, the system $1x$ will remain the system $1x$ (a generalized understanding of the system as a complex model). For other values, the system will be converted to system zero, $0^{\infty x}$.

A brief analysis of some mathematical operations in the concept AN:

Example: $3 + 2 = 5$.

In the concept AN, the number 5 is represented as the cumulative set of the numbers 3 and 2. Where the numbers 3 and 2 are the sets of the number 1. In turn, a unit is already a discrete set of values of integers, and a discrete unit is understood as a system that consists either of other discrete sets, or only of the infinity of its states.

Generalize the formula and get the following expression analysis AN.

$$0_3 * \infty_3 + 0_2 * \infty_2 = 5 = 5 * (0_1 * \infty_1)$$

Based on this analysis, a conclusion is made about the inequality of infinities and the differentiation of the types of infinities: $\infty_3 \neq \infty_2$ $\infty_x \neq \infty_y$

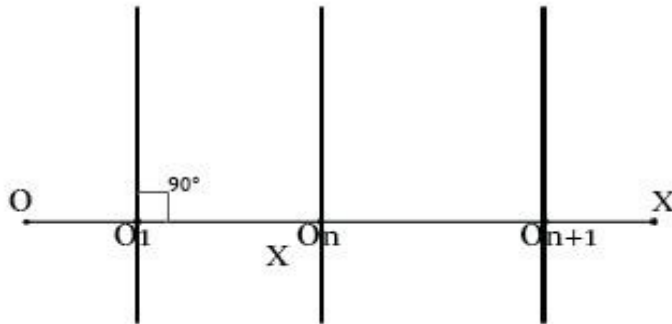
This concept is completely different from the concept of classical mathematics, which postulates the equality of all infinities and substitutes ∞_x instead of ∞_y . Which is wrong!

$$\infty_x + 1 \neq \infty_x \quad \infty_x + 0x \neq \infty_x$$

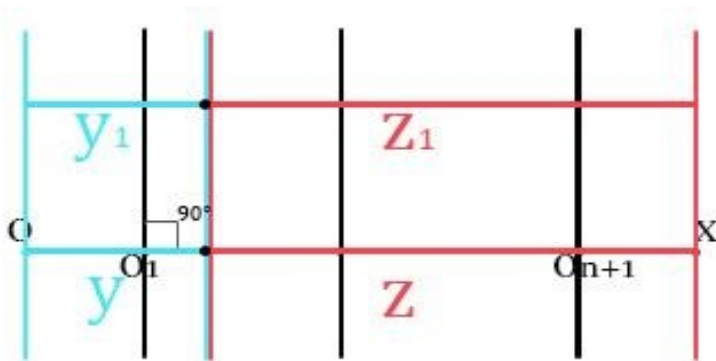
Proof of the inequality of infinities:

1 Through any segment X, you can draw an infinite number of perpendicular lines that intersect the segment X, at each point.

- 2 When a segment is conditionally cut at an arbitrary point that lies on it outside the limits, the segments Y and Z are obtained.
- 3 Through the segment Y and Z, you can construct an infinite number of perpendicular lines intersecting the segment Y and Z at each point.
- 4 Through the infinity of straight lines of the segment Y or Z, perpendicular to them at each point, it is impossible to build a segment equal to X, which will be perpendicular to the given straight lines, i.e. parallel to the segment Y or Z.
- 5 Conclusion! The infinity of the perpendicular lines (in their totality) of the segment Y or Z, is not equal to the infinity of the perpendicular lines of the segment X, $\infty_y \neq \infty_x$; $\infty_z \neq \infty_x$. In turn, the length of the segments will be the dimension of the set of perpendicular lines (their infinite set).



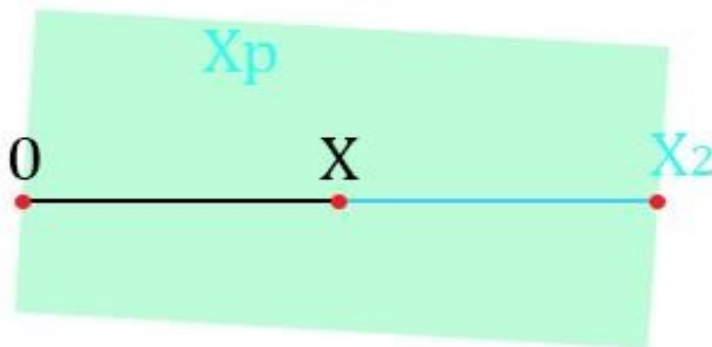
Picture 2



Picture 3

The analysis of the secants to the segments Y and Z and the growth of their values will be considered later. (see the section 3 "Introduction to spin-systems and entropy AS").

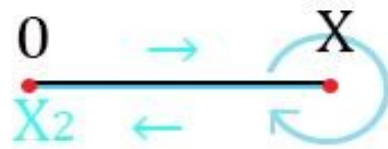
From this analysis AN, a conclusion is drawn about the difference of infinities ($\infty_x \neq \infty_y$) and the definition of the types of infinities. Now let's analyze the considered segment OX (X). extrapolate this segment to an imaginary bounded plane, called X_p , with a plane thickness equal to zero, 0. Let's extend the segment OX, in the straight line lying to it, by 2 times, to the conditional imaginary point X_2 . Get the segment $XX_2 = OX$



Picture 4

Let's fold the imaginary plane at point X in half by 360° (when viewed from the position of two-dimensional space, we can understand the construction of a circle). If the thickness of the imaginary plane is equal to zero, we

get (approximate) that point X_2 will come to the coordinate of point O . Denote the vectors of the construction of segments $O \rightarrow X$ and $X \rightarrow X_2$



Picture 5

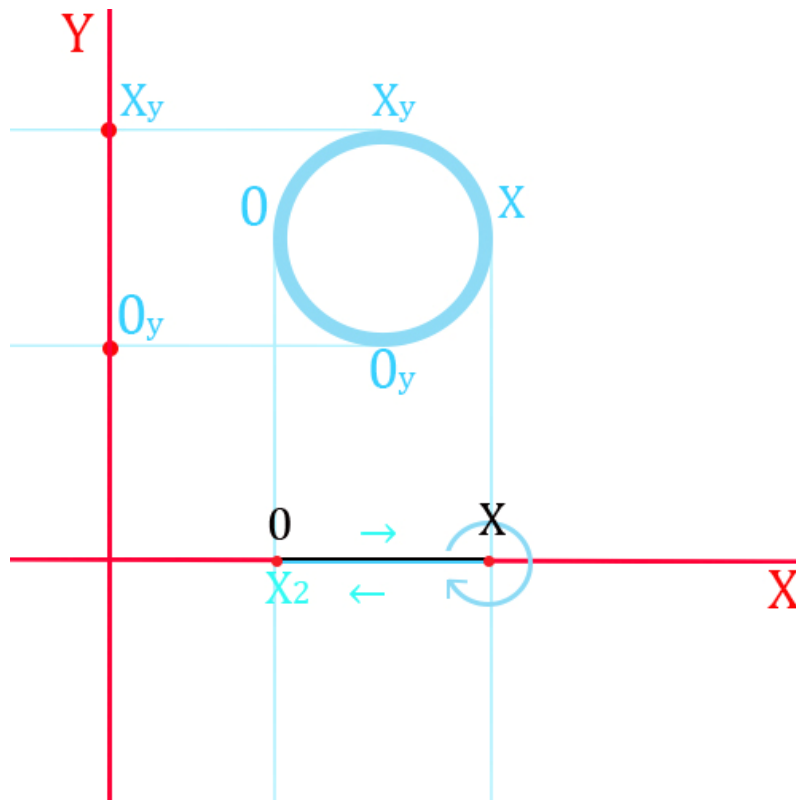
The coordinates of point X_2 came to the coordinates of point O (conditional generalization).

Replace the vector notation $X \rightarrow X_2$ per vector $X \rightarrow O$.

Denote the resulting segment OX_2 , vector notation, $O \rightarrow X \rightarrow O$. Let us simplify the vector notation of the line OX_2 by $O \rightleftharpoons X$.

Get that, when moving along the vector $O \rightleftharpoons X$ (as for the circle), the segment OX_2 turns into an infinitely long straight line " x_∞ ", which will be repeated after a period of OX_2 (cycle of dimension).

Similarly, the segment OX can be represented as an imaginary infinite line, for which the length of the segment OX will be the dimension of this infinite line. Such an imaginary line can be denoted as infinity by defining it in the class of "self-similar infinity" and denoting it as ∞a .



Picture 6

More correctly and clearly, this segment is represented as the frontal projection of an imaginary circle, a two-dimensional space, on one coordinate axis. That is, a segment is an imaginary one-dimensional circle.

We also conclude that for a one-dimensional "circle-projection-segment", the value of the number π will be equal to two.

$$C(O \rightleftharpoons X) = (O \rightarrow X) + (X \rightarrow O) = 2(O \rightarrow X) = \pi D; \quad D = (O \rightarrow X) = (X \rightarrow O); \quad \pi_1 = 2.$$

The change in the value of π for a one-dimensional space will be considered in the section on general mechanics of reality and the refutation of the Hodge conjecture. At the same time, criticism may be expressed that these conclusions are not correct, because the segment will have an area of $S=\pi R^2$. However, this formula is not applicable for calculating the area of an imaginary circle-segment. Because it is a simplification of the equality of the radii of a circle directed along the coordinate axes in two-dimensional space.

The full version of the area of the circle will look like $S=\pi R_y R_x$.

Where $R_y=0$ and $S=\pi R_x \cdot 0 = 0$.

Can also understand a point as a frontal projection of an imaginary straight line, and a circle as a frontal projection of an imaginary sphere.

Let's define the concept of **"Everest points"**.

"Everest point" the author's term for the system. "Everest points" refers to the maximum permissible values of the system.

The name "Everest point" takes its name from the phrase "the maximum height of the mountains" [4 Page 608], for planet Earth. For any system, in the concept AN, several "Everest points" are allowed. So, for water (water system), these points can be: the boiling point of water, as well as the temperature of the transition of the aggregate state of water from liquid to solid.

For a segment OX "Everest point" will be the points O and X, because if exceed the value "X" ($X + 1$), segment system OX is converted to another system. $X + 1 = Y \quad Y \neq X!$

At the moment, we can distinguish three classes of infinities:

1) $\infty_a (\infty_x)$ – "self-similar infinity "with dimension "a". Infinity, which can be represented as an imaginary circle. In which the "Everest point" determine the dimension and conditionally occupy (folding the imaginary plane) one imaginary coordinate (intersect).

2) $\infty_g (\infty_p)$ – the hypothetical "infinity of the greatest set" is not self-similar, but it can be partially self-similar. It can be represented as an "open line". Represents the sum of all the segment on this straight line.:

$$\infty_g = \infty_a \times \infty$$

3) N_∞ - a hypothetical "unimaginable infinity"; the totality of all infinities ∞_g and ∞_a . Is not possible for addition operations, the expression $N_\infty + 1$ does not make sense.

$$N_\infty = (\infty_a + \infty_g) \infty_{ag}$$

$$N_\infty = 0_\infty \times \infty_\infty$$

$$N_\infty - 1x = \infty_g(x)$$

Consider the intersection of parallel lines at infinity:

A) Proof of the intersection of infinite lines at the point Zx, on the plane "X".

1. Intersecting lines are two lines that lie in the same plane and have one common point.
2. For any plane X, you can draw an imaginary Z coordinate axis perpendicular to the entire plane. In which the entire plane will have a common point "Zx", on the imaginary coordinate axis Z. (the entire plane turns to a point on the Z axis).
3. The point Zx will be common to all points of the plane "X", the totality of which is equal to infinity.
4. All parallel lines lying in the same plane intersect in plane. This plane can be represented as a point lying in a new coordinate axis that is lowered perpendicular to this plane. All parallel lines lying in the same plane intersect at their combined infinity (have an intersection point).

B) All points on a straight line are parallel and intersect in their infinite set.

5. For any straight line "A" lying in the plane "X", you can draw an imaginary Z coordinate axis. In which all points of the line A, the plane X, will have a common point "Z_x" on the axis of the imaginary coordinates Z. The point Z_x will be common to all points of the line, the totality of which is equal to infinity.

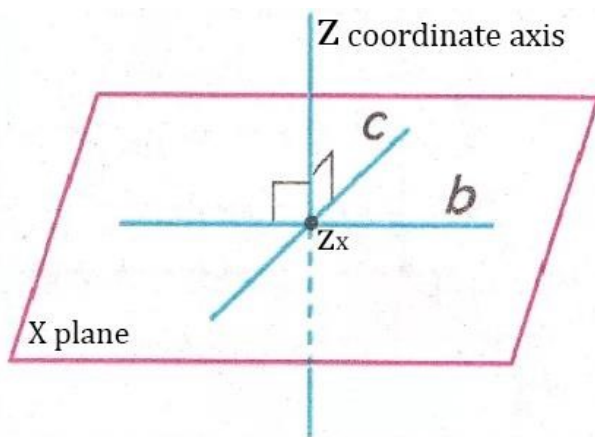
6. From an infinite number of parallel segments, a "bounded plane" can be constructed, when constructing "Everest points", parallel segments, sequentially and continuously, along a new coordinate axis. Such a plane will be called "truncated".

"truncated plane" - there is some geometric area on the plane. According to the AC concept, this plane is a form of self-similar infinity, extrapolated from the segment model.

On a truncated plane, all parallel segments of this plane will intersect at a point on the imaginary Z coordinate axis (which can be lowered perpendicular to this plane).

7. A "curved plane" can be represented as "imaginary not curved". On this plane, you can also lower the imaginary perpendicular coordinate axis, to obtain the intersection point of parallel segments, this curved plane.

8. For Any multidimensional object or geometric construction can have an imaginary perpendicular (orthogonal) coordinate axis, that is perpendicular to all other coordinate axes of this object.



Picture 7

After a general analysis of the numbers and types of infinity, we will proceed to the analysis of the number 0 in the concept AN.

In the current concept AN, the analysis of the number 0 shows that, just as with infinity, several completely different values are generalized under the number 0; let's define the classes of the number 0:

0n (0н) - what's not there. The state of the system's relationship to other systems, beyond the boundaries of its Everest points.

0w (0б)- what will happen in a certain period of time. The system 1x is observed on the axis of its time beyond the boundary of its Everest points.

0v (0в) – zero is possible (variability). What can be (is a system-integer value i.e. 1x).

A system of 1 x observed over the boundaries of its Everest points. Such a system can take the form of 1x or not, depending on the entropy AS of all systems.

$$0v(x) = \infty x \times 0x = 1x \text{ or } 0y$$

0s – zero convention (Spin). System 1x is imaginary in relation to other systems. Zero convention is a potential system.

Such a system is existing in relation to itself. In relation to other systems, this system will be considered conditional (partially correlated). Examples of such a system are the spin of a particle and the potential energy. Such potential systems are referred to terminologically as "**Spin-systems**".

0im (0нв) – what cannot be (impossible). The system is written as $0x \times \infty x = 0im(x)$

An infinite set of states, which, as a consequence of entropy AS (see section 3), will not give an integer value, in relation to other systems.

0a (0x) – absolute zero. A point or a conditional value that can be represented as a point. In the aggregate infinite set, gives an integer value (system). $0x \times \infty x = 1x$. Is the state of its system AN “1x”.

0c (0k) – zero of the coordinate axes. A conditional value of zero that can be applied to any number as a reference point.

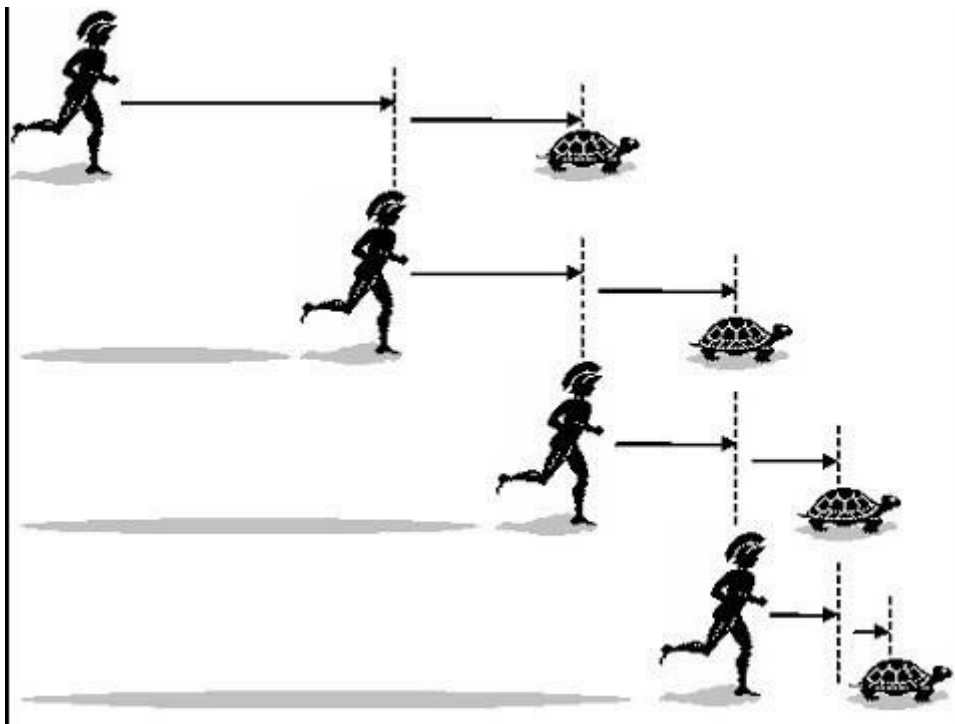
0e (0np) – zero limit. Zero as the origin point of the coordinate vector, which is the Everest point for the system. When the system fails to accept a smaller value (for example: the absolute zero of temperature). The expression $0e - 1$ (vector unit) does not make sense. Also, when changing the vector of consideration of the system AN, $0e$ can be understood as the maximum allowable value, for example, the speed of light.

0t - the theoretical 'real zero' is nothing, is impossible (*0im*).

Hypothetically possible only in the state of superposition because it is a paradox.

2. Analysis of the concept AN in Zeno's aporia "Achilles and the tortoise"

Aporia of the ancient Greek philosopher Zeno - “swift-footed Achilles will never catch up with the slow turtle.”



Picture 8

This example, in the concept AN, does not cause a paradox, according to it, Achilles naturally catches up with the turtle. According to the concept AN, Achilles does not move for a certain distance, but always overcomes an infinite distance, for an infinite value of time.

$$V(\text{Achilles}) = (\infty x \times 0x) \text{ (meters)} / (\infty y \times 0y) \text{ (second)}.$$

$$V(\text{Achilles}) = (\infty x_1 \times 0x_1) \text{ (meters)} / (\infty y \times 0y) \text{ (second)}.$$

Thus, Achilles and the tortoise travel an infinite distance of different dimensions, in an infinite time of different dimensions. Achilles catches up with the turtle because the distance between them decreases by an infinity of smaller dimension, before the reduction of the distance reverses to the value $0x$. In this case, the discreteness of the infinity of distance reduction depends on the strict discreteness of time.

The correlation of the discreteness of distance from time is determined by the velocity, when the velocity is a system of $1x$, which is a potential system, i.e. $0s$ (spin-system), relative to the distance and time. That is,

speed, as a system, does not belong to the set of “distance” and “time” systems, but is a new system, the correlations of these systems to each other.

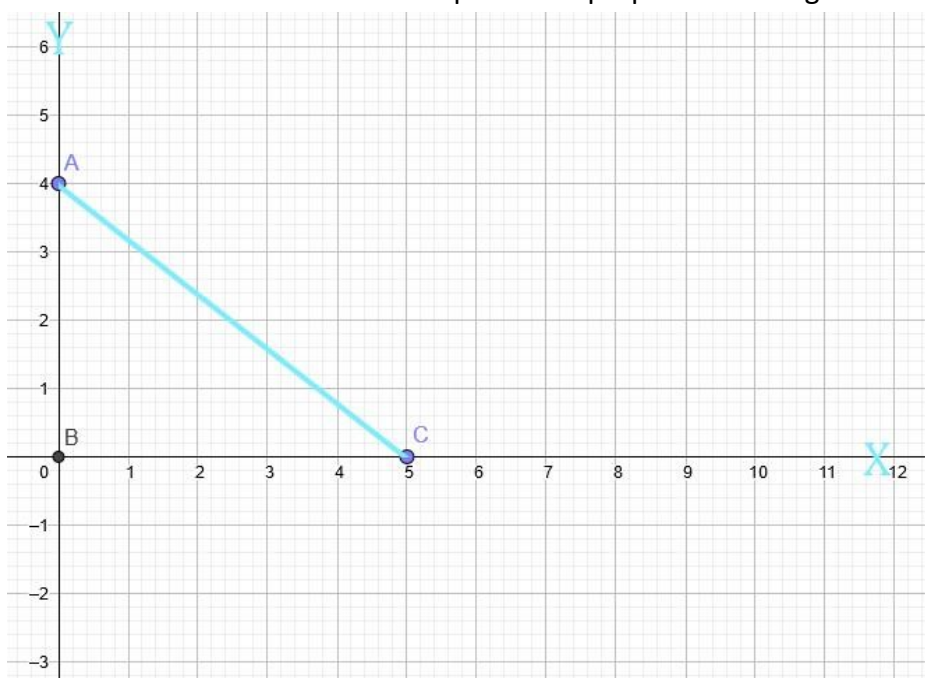
Thus, knowing the Achilles' and Turtle's velocities and the discrete ratio of the starting distance, we can calculate the point of reversal of the discreteness of the distance between the systems to the value 0, for a period of discreteness of time, relative to the velocity system.

This regularity of the ratio of the discreteness of quantities, in the general system “Achilles-time-space”, is determined by the phenomenon of entropy AS (average state) of systems.

3. Introduction to spin-systems and entropy AS (Δ)

As an introductory introduction to the concepts of “spin-systems AN” and “entropy AS” (average state) of systems AN, let's consider a simple mathematical model that will reflect these physical phenomena of reality. Later, we will extrapolate this model to more complex systems and physical phenomena.

Picture 9 shows a two-dimensional space with perpendicular segments $AB \perp BC$.



Picture 9

Denote the segments $AB \perp BC$, as two real system Come to the conclusion that there is potentially a segment AC, which is for systems $AB \perp BC$ a “spin-system” AC (0s).

The existence of the segment AC is a regularity and has the length of a segment, which depends on the dimension AB to BC.

When the values of the length of the segment AB or BC change, the value of the system AC changes simultaneously, with infinite speed, for a zero period of time. Such an instantly change in the values of systems “X” relative to the change in the values of other systems “Y” is called entropy average state of the systems (entropy AS systems).

The entropy AS of the systems AN is denoted by the icon of this example – “ Δ ”.

In concept AN, entropy AS is a physical phenomenon of reality.

The concept of AN postulates that systems exist in a value of 1 or 0 outside of space and time. And space and time are systems 1a (absolute unit), which, as in the example with the segment AC, are a consequence of the entropy of a set of reality systems.

This example, with an imaginary segment, shows why the “proof of the inequality infinities”, see No. 1 “non-standard analysis AN”, you cannot apply the argument from the possibility constructing non-parallel secant segment, to segments Y or Z. Since the secant segment constructed through the infinity of

perpendicular lines to the segments Y or Z, will be a consequence of the entropy SS, as a consequence of the correlation of the length of the secant segment with the increase distance of the imaginary point of the secant, along the Y coordinate axis, perpendicular to the segment Y or Z. Thus, the value of the secant does not justify the size of the set of infinity perpendicular lines of the segment Y or Z. Where the size of the set of straight lines, is the correlation of this set with respect to the system of the segment Y or Z.

The size of the plane formed by many of the perpendicular lines, to segments Y or Z, can be regarded, as infinite imaginary area, where a long secant to segment Y, or Z could be endless, when the distance of a virtual point on the Y-axis is moved away at an infinite distance. The length of the segment secant to the segments Y or Z is a consequence of the entropy AS. The infinite length of a hypothetical imaginary segment in the infinity of a set of perpendicular lines does not cancel the dimension of this set, but complements the ideas about infinities, their shape, empirical observations and analysis.

Entropy AS Δ - this system AN "which does not lie " in space-time (except for hypothetical special cases), is a consequence of the contradictions of ASP. It forms itself in the "time zero" through "two-vector causality (two-vector determines)". The entropy of AS is the solution of the entropy of AS for ASP, in which the system AN reality system AN conditionality system AN unreality is formed in the ASP

Working with the literature on this topic, I found similar works, the conclusions of which were served by other models of the concept of the scientific method: von Neumann entropy [6], entropic gravity [5]. At the same time, it is worth noting that in the concept of AN, the entropy AS is represented not only by real values, but also by possible and impossible ones, i.e., the concept AN of entropy AS covers a larger number of states of the system involved in entropy. The most important thing in the concept AN is that the entropy AS is represented by the equilibrium of an infinite set of states of the system AN.

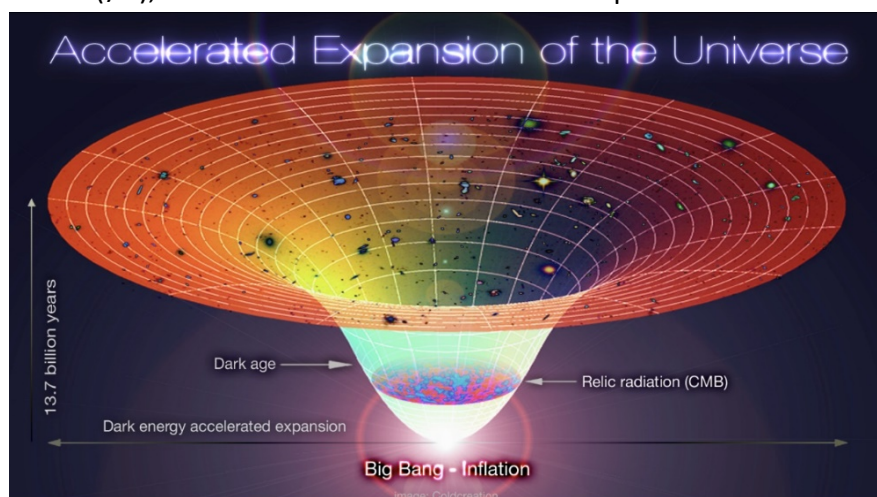
For a complete picture of the entropy of AS and the source of this entropy, we turn to the cosmological model "Big Bang" (Friedmann–Einstein universe) [7]. Also, will define another physical phenomenon called "Absolute Superposition" (ASP).

4. Absolute Superposition (ASP), in the concept "Friedmann–Einstein universe" and theory SAN

In the concept of the cosmological model of the big bang, we will consider such a phenomenon as the existence of time.

First, we will designate our universe as the "Alpha" universe. This name is chosen for the reason that for us this universe is the origin of coordinates, relative to other universes, if they exist.

In accordance with the conclusions of the general relativity and the model "Friedmann–Einstein universe"[7], about the initial point of time zero (\emptyset) for the Alpha universe, where the point of time zero is the Everest point of the Alpha universe ($\emptyset c$), it is concluded that there is such a phenomenon as "non-existence of time".



As mentioned above, in the example of entropy AS, systems, unlike matter, can exist as physical objects without (outside) space and time. Let's write the time value of the Alpha universe as $T_A = (0, X)$ seconds (maybe $X = \infty$). I.e., at the point $\emptyset c$, "time alpha universe", system "Alpha universe", does not exist, and the system "universe Alpha" itself is in the state of the system AN different from the value "observed reality of the universe Alpha" (reality A). Such a system state, at the moment, is designated as the "intangible potential phase" system AN. This concept of the "immaterial potential phase" is a revision of the cosmic singularity model, complementing the standard cosmological model [8] with the "immaterial potential phase" stage preceding the Alpha universe singularity.

Even with the hypothetical existence of matter and time precisely at the point of time 0, the Alpha universe, the concept AN postulate a point preceding such a point 0, at which time does not yet exist. As a consequence, at a given point, there is no matter and space in the form of reality (however, as systems they exist potentially i.e. $\emptyset v$). Such a point in the Alpha universe, in which time itself is absent, is denoted by the term "**Absolute Superposition**" (ASP). [40. We have thus seen how classical domain of the Universe arises from the superposition principle (postulate (i)) and unitarity (postulate (ii)) as well as rudimentary assumptions about information flows (postulate (iii)), and a few basic facts about states of composite quantum systems (including their tensor nature, often cited as additional "axiom (0)"]

Based on the concept of AN and ASP, the singularity of the Alpha universe can only exist at a point time after the value of $\emptyset c$ for the Alpha universe, since the singularity model requires already specified physical quantities (mass, density, etc.), when the values of the Alpha universe are not even defined in the ASP. In ASP, all values of the Alpha universe are in an indefinite allowable potential value, similar to the wave function and the electron cloud model.

In this way, such a phenomenon is postulated as the existence of all systems initially in a potential state, without time. Such a phenomenon could be considered a hypothesis if it were not for the existence and observation of superpositions in our Alpha universe. And also, the existence of a photon in a state in which the proper time of the photon is 0 (zero). In the AN "photon" system, the entropy AS solution is the absence of the "photon time" system. I.e., the photon simultaneously reaches the point of completion of the path in its frame of reference, moving in a vacuum, producing momentary interactions with the "space" system.". This behavior of the photon postulates a conclusion about the empirical observation of momentary interactions. The possibility of momentary interactions is the basis for the formation of the ASP model. This conclusion, about momentary interactions, coincides with the hypotheses of quantum fluctuations as the source of the origin of the Alpha universe, while radically different in the representation of the model of such fluctuations.

The ASP model-states that point $\emptyset c$ time existed (and still exists) all real possible and impossible systems. After that, the "momentary ASP sequence" occurs."

Momentary ASP sequence:

- 1 All possible and impossible systems exist as potential ones.
- 2 All systems, in ASP, momentary come into conflict with each other.
- 3 Exists in ASP system, the entropy mean state system begins to determine ASP, for the reason that the potential nature of the system entropy AS is the determination of all systems.
- 4 The determination entropy AS leads to a momentary solution of all contradictions, of all potential systems.
- 5 The solution of all the contradictions of the systems determines the possible and impossible systems.

6 Possible systems make up the system AN "reality".

7 As a result of a number of entropies AS the model of the reality system is determined in the ASP.

8 Entropy AS determines the necessity of the existence of personal time and space for the reality of the Alpha universe.

9 The entropy AS momentary orders and structures the systems of the Alpha universe and their interactions.

10 As a result of a series of entropies AS, the "ASP" systems and the foundations of reality, there is a "big bang", the birth of space-time, matter and the entire Alpha universe. The speed of light for the Alpha universe, the value of the number π , the Planck constant, and a number of dimensions (discreteness Alpha) are determined, as a consequence of the solution of the entropy AS, of the consistency of the systems that make up the Alpha universe.

The set of all entropy AS systems AN in ASP, amounting to a one-time (momentary) sequence of ASP is "entropy AS ASP".

The instantaneous (momentary) entropy of the SS contradicts the SRT concept of the information transfer rate and corrects the SRT information transfer rate postulate, as – "the transfer of information by a material object or system correlated with space-time (Alpha) cannot exceed the speed of light, in the Alpha universe". This position of the concept AN of one-time entropy AS is consistent with the empirical observations of wave function collapse [9. page.651] [34]. And as a result, from SRT and concepts AN, limiting speed of information transmission systems "matter", in the Alpha universe, is the result of entropy AS ASP, because it indicates that or the rate of transmission would lead to degradation of the system "universe alpha", or the decision of the entropy SS ASP specified by the operator ASP.

Justification of the independence of the existence of systems AN from space-time, except for those competing with it. The construction of the "triangle" system is possible at any point in space-time. System "water" of the alpha universe remains the system "water" of the Alpha system, regardless of its location in the coordinates of space and time. System "water" of the Alpha universe can become another system only if it interacts with other systems. Interaction with other systems is a process of entropy AS, after which all interacting systems come to an equilibrium of consistency, within the system of their aggregate set. The "triangle" system, as well as the "mathematics" system or the "physics" system, also exist regardless of the matter and the location of the entropy operator AS of these systems on the coordinates of space-time.

This concept postulates that reality is based on systems AN, and not on space-time and matter. Space-time and matter are only a class of derived systems AN that are a consequence of the entropy AS of all systems, their universe, or subspace.

At the same time, as a consequence of the entropy of the AS ASP, systems that came into conflict in the Alpha universe could create their own universes, which would be parallel or perpendicular (orthogonal) to the Alpha universe.

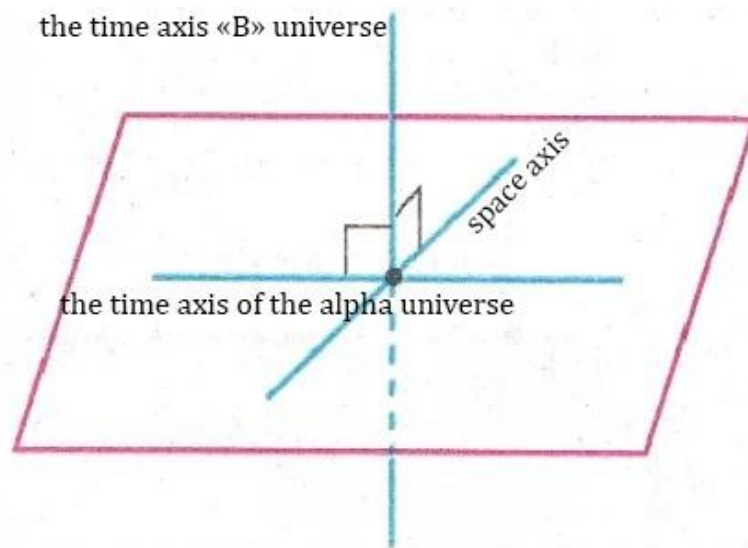
With this we come to the definition:

The universe is a collection of non-contradictory systems, relative to the system of its universe. These systems AN are formed due to the entropy AS ASP. They have a personal system of "space-time" and a personal system of "matter".

Parallel universes – universes whose time correlates with each other.

Perpendicular universes (orthogonal) - universes whose time is not correlated with each other.

For a perpendicular universe A, the time of the universe B is simultaneous. For a perpendicular universe A, the time of the universe B is simultaneous. The perpendicular universe, in cases of observation from others \perp universes, will look like the universe in superposition.



Picture 11

Observations of universes perpendicular to each other will look like finding perpendicular universes relative to each other in the ASP. This simultaneously leads us to the conclusion that all universes are in the ASP and only have “personal time” (the “time” system for systems AN). Thus, all universes are ASP fluctuations.

At the same time, the conclusion is postulated: everything that can exist exists, in a certain period of time and in a valid location.

However, this conclusion is limited to one more conclusion: everything that can exist exists, if it is not limited by the " system correcting entropy AS ASP " (operator ASP).

System correcting the " entropy AS ASP" (operator ASP)– a hypothetically valid solution of the entropy AS ASP, which determines the discreteness of the uncertainty of the value X for formula -

$0x \times \infty x = 1x = X$. Hypothetically, the correction system is responsible for the values of: the number π , the speed of light, the Punk values, and other values of the Alpha universe. At a time when the entropy AS allows soft determinism and uncertainty, system corrector determines a more severe form of determinism. This system will be considered in the analysis of the "Einstein-Podolsky-Rosen paradox" and the Heisenberg uncertainty.

5. Concept AN and " Einstein-Podolsky-Rosen Paradox (EPR)". One-time entropy AS. Concept of "time AN " for different systems

As an example of confirmation of the predictive base of the theory of “systems of absolute numbers” (SAN), consider the “Einstein-Podolsky-Rosen Paradox” [10] [35].

The first clear example of the system entropy of the average state Δ , i.e., the equilibrium of systems, in the EPR is the singlet state.

$$|0, 0\rangle = (\uparrow\downarrow - \downarrow\uparrow)/\sqrt{2} \quad s = 0 \quad (\text{singlet})$$

In the concept AN, the singlet state is the solution of the entropy of the AS, for a set of systems, in which these systems do not contradict each other, in their set.

In this example, the entropy AS does not have its own time. Whereas, according to the concept ASP, a special case of entropy AS for a set of systems X or system Y can have its own time and speed $V < \infty$, if this is required by the entropy AS for the set of systems in which system Y or set of systems X are included. This conclusion follows from the postulation that the entropy AS is the system of the Alpha universe, just as the Alpha universe is the system. And any system can have its own time, if this is required by the entropy AS for the set of systems of which is a part this system AN.

This concept of time AN is reflected in the SRT [11]. Where time, as a system, becomes the owner of its own time for a set of reference systems. This conclusion suggests that time has different speeds for different sets of systems AN.

The speed of time for the system AN:
$$Vt(x) = \frac{T(x)}{t_{\Delta}}$$

Where $T(x)$ is the value of the final coordinate of the interaction time, and t_{Δ} - is the proper entropy time of the system "time $T(x)$ " (see Picture 9).

It should also be noted, despite the fact that the "objects" of the Alpha universe cannot exceed the speed of light and have an Everest point of a speed less than infinity, at the same time, the "private time system", in the Alpha universe, can have a speed of time flow equal to infinity. This means that the systems AN can interact at any speed.

Thus, we repeat and summarize. For a photon system, in a vacuum, the time flow rate can be equal to infinity – the photon reaches the time coordinate $T(x)$ the photon reaches the time coordinate for the set of systems X in which it is observed, instantly (in its reference frame). We state: in its frame of reference, the photon is in a superposition, i.e., at all points of the coordinates of time and space of its route(vacuum) at the same time.

In the case of finding a photon in a medium other than vacuum, the interaction (conflict of systems) of the photon system with the medium system occurs. After that, there is a one-time entropy of the AS of the set of "photon-medium" systems and a change in the speed of the photon, as well as the speed of the flow of time of the photon.

The difference in the time flow rates for different systems observed in the Alpha universe is a consequence of the entropy AS for the Alpha universe. This is a clear example of confirming the prediction of proper time for systems AN based on the concept of ASP.

$Vt(x) = \frac{T(x)}{t_{\Delta}}$: Despite the fact that $t_{\Delta} = 0im$, $Vt = \infty$ quantity $T(x)$, remains equal to its value $T(x) = X$, according to the formula $0x \times \infty x = 1x = X$.

Returning to the EPR paradox, we note that changes in the state of spin-systems, in their set of systems AN, can occur instantly. As a consequence of the instantaneous entropy AS of this set of systems AN. At the same time, the limitations of the information transfer rate within the SRT only apply to the interaction of systems included in the set of "space-time of the Alpha universe" or correlated with them in the general system "entropy AS" of their set of systems AN. This, in turn, indicates that the restriction of the speed of light in the Alpha universe is not a limitation of the possibility, but the result of the entropy AS ASP. Because with a different value of the speed of light, the existence of the systems AN of the Alpha universe would lead to a contradiction, and the universe could not exist. The fact that the speed of light is a consequence and not an "a priori value" is conceptually indicative of the "entropy" nature, within the framework of the entropy AS ASP. The same concept points to the possibility of a different value for the speed of light, which is observable for the speed of light in a medium other than vacuum, which once again indicates the entropic nature of the speed of light.

An experimental confirmation that the system AN can move faster than the speed of light is the system AN "Sunpuddle" (*ru. solar bunny*) [27] [36]. The motion of which, as a consequence of the entropy AS, can exceed the speed of light.

Thus, the simultaneous entropy of the SS postulates a "wave function collapse" (*ru. von Neumann Reduction*) [9] [34].

The uncertainty of the value of the spin direction for systems, in the concept AN, is also of key importance. This value of the spin direction indicates that the "spin direction" system of the conditional

number X has two values at the same time, when solving the equation: $0x \times \infty x = 1x = X$. Just as in the case of the above example $\sqrt{4} = +2$ и -2 .

In the full version of the example, we have the following formula $\sqrt{4x} = 0x * \infty x$

that is, the value of X is indeterminate, but has the Everest points of the values of: $+2$ and -2 , which are determined by the value of the number 4 .

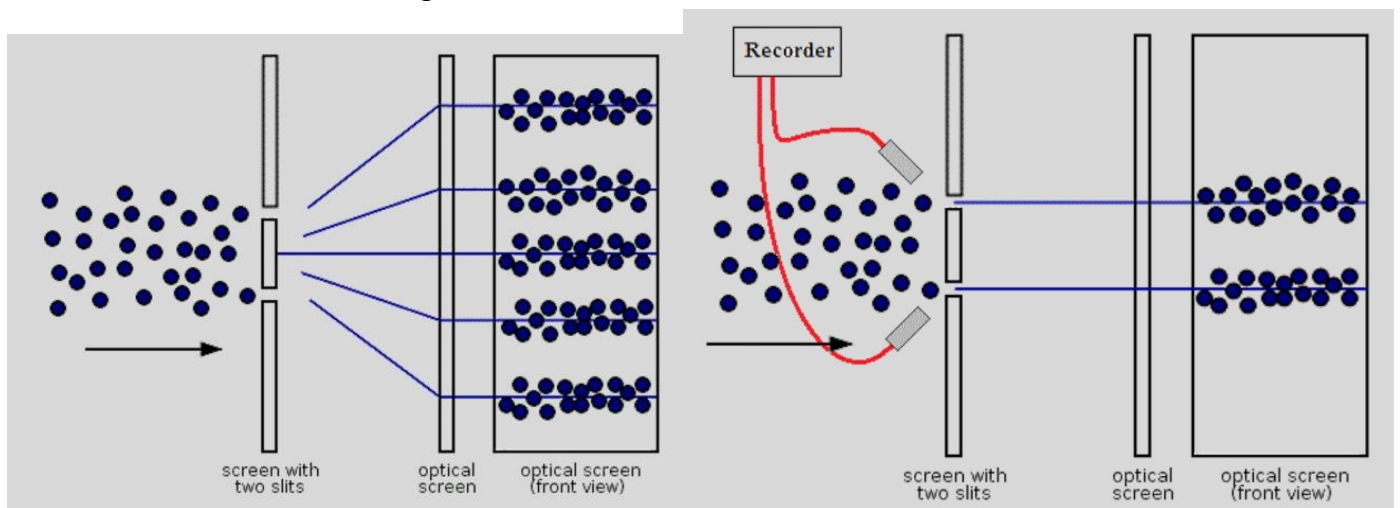
In the cases with spin, the values of the spin direction, i.e., the uncertainty value X , are determined by the "spin-external system" (operator), which, when interacting, act as a system that corrects the "entropy AS".

Thus, using the example of " $\sqrt{4x}$ " we get the correction $X = -2$; $\sqrt{4(-2)} = -2$.

These conclusions confirm the existence of systems of entropy AS correctors. This is important for determining the probability of the existence of a system corrector of entropy AS ASP. Such systems, that correct the entropy AS, act as systems operators entropy AS. Thus, the entropy operators AS determine the values of X for $1x = 0x \times \infty x$. At the same time, AN "X" can take several values at the same time, if this does not contradict the entropy AS of the set of systems including the system "X": $X = \sqrt{4} = +2$ и -2 , until the value of X is corrected by the system operator.

6. The System corrector (operator) entropy AS and wave-particle duality

As an empirical observation of the concept AN and entropy AS, let us consider the experiment with the transmission of an electron through two slits [12][13].



Picture 12

The presented pictures show that the "electron" AF system, passing through two slits, creates an interference pattern. However, in cases of measurement and observation of the fact of the passage of an electron through a specific slit, the interference pattern disappears.

In the concept AN, the system registering the electron trajectory (the observer) acts as an ordinary corrector system, causing a one-time entropy AS. This postulates the conclusion that before the intervention of the operator system, the photon as a corpuscle does not exist. The photon begins to exist as a corpuscle only in the case of the entropy AS of the set of systems in which it interacts.

At the same time, the process of converting the system "electron" from the system "wave" (wave function) to the system corpuscle, as a result of the AS entropy requirement, is similar to the appearance of the time velocity for time in SRT, as well as the birth of the Alpha universe with space-time from the ASP.

This postulates that in the concept AN, corpuscles are the forms of systems AN defined as a consequence of the entropy AS. Or in other words, not a particle wave and corpuscle at the same time, but only the "wave nature", which may be presented in the form of "corpuscle" the result of entropy SS.

The corpuscular shape of a system, in the concept AN, is determined by the consequence of the entropy AS of the set of systems that include this system. And also, the correction of a more precise value of X for the absolute unit of 1x, which is the system corpuscle. The function of correcting the entropy AS is performed by the corrector system, which can also be called the system "operator". The system operator can be a new system AN introduced into the set X of the systems AN, which violates the possibility of the previous solution of the entropy AS, for the set X (for example, an observer).

7. The quantum Zeno effect in the concept AN

The quantum Zeno effect [14] [37] is another example of a change in the behavior of systems AN, as a result of the participation of the operator in the entropy AS.

Measurements of the state of the ions slowed down their transition between states [15]. Thus, when measuring the state of ions, the measuring system AN becomes the entropy AS operator for the system "ion", the observation of the change in the state of ions causes contradictions in the aggregate set of systems involved in the experiment. This causes the effect of changing the value of the equilibrium point of the entropy AS for all the systems AN involved in the experiment, which in the aggregate set of systems does not cause contradictions.

At the same time, it is concluded that the entropy AS, without the participation of the operator system, tends to take an optimally simple (volumetric) solution for the entire set of systems, in which the uncertainty is the more optimal solution. Such an optimal solution of the entropy AS is called "soft determinism." The participation of the operator system in the correction of the exact value of the entropy AS, as a counterweight to the optimal solution, is called -"strict determinism."

In turn, the empirical non-optimality of the observed discrete and" strictly deterministic " behavior of the Alpha universe points to the system of the entropy AS operator for the ASP.

In this interpretation, the concept AN, as a consequence of the entropy AS, the effect of the "Quantum Cheshire Cat " is predicted [16], since the concept AN represents the nature of reality how system AN, so the optimal solution entropy AS allows the system AN to be located in a certain region of space (multiple locations of this area). At the same time, the effect of the "Quantum Cheshire Cat "and the interpretation of the theory SAN is an argument in the statement "*the independence of the existence of systems from space-time, except for those that correlate with it*" [see page.14].

8. The Copenhagen interpretation and the Heisenberg's uncertainty principle, in the concept AN

Heisenberg's uncertainty principle [17] [38] also serves as a visual interpretation of the observed entropy AS, as a result of which the accuracy of measuring one state of a particle increases the degree of uncertainty of measuring another state. At the moment, the theory SAN provides an explanation of the Heisenberg uncertainty regularity in the form that the system AN is represented by the infinity of its actual, potential and impossible states. The theory SAN states that this effect is due to the entropy AS. Thus, as the accuracy of measuring one state of a particle increases, in the set of systems AN, which includes the measured particle as a system AN, the entropy AS occurs, which requires the uncertainty of the other state of the particle.

However, the theory SAN does not explain exactly this solution of the entropy AS, while other solutions are speculatively allowed. At the same time this solution of the entropy AS is explained by the position of the concept AN that: "*the solution of the entropy AS itself is unpredictable and uncertain, as a consequence of the participation in the entropy AS of an infinite number of states of the system $0 \times \infty = n$ "*

This interpretation of the concept AN corrects the Copenhagen interpretation; the uncertainty of the value of X in the concept AN is acceptable for the existence of systems. At the same time, in the concept AN, the particle is a system AN. The behavior and existence of the system AN "particle" is determined only by the entropy AS of the aggregate set of systems in which it is included. Thus, the measuring instruments of the Copenhagen interpretation act as full-fledged systems that violate the equilibrium of the set of systems in which the conditional particle system was located. In this state, the equilibrium of the set of systems X, the particle, as such of the system AN, may not even exist, or it may exist as a potential spin-system or in the form of (as) another system. The particle is the result of the equilibrium state of the set of systems X of entropy AS, this set of system X, as well as the equilibrium of states relative to other sets of systems Y and the set of systems of the universe Alpha. The analogy of this conclusion can be empirically observed in the mechanics of the existence of a photon, virtual particles, and the impossibility of the existence of quarks in the free state, i.e., beyond the limits of their systems AN.

A change in the equilibrium state of the systems leads to a new form of entropy AS for the set of systems X. The consequence of the violation of such an equilibrium can be a measuring device as a set of systems Y. d also, such a system of the set Y can act as an operator system. In turn, the uncertainty of the equilibrium of the set of systems X is a consequence of all the potential possible states of the set of systems X, equal to infinity, at which an infinite number of contradictions of systems X is possible, in the set of systems X. The permissibility of the equilibrium values for the set of systems X, in this case, can assume some uncertainty of values, limited by its Everest points. At the same time, the tendency of a set of systems to general equilibrium is the entropy AS of this set.

9. Consideration of spin-systems and elementary particles in the framework of the concept AN

As stated above, the concept of the theory SAN considers all particles as systems. At the same time, it is extrapolated that systems can take the form of particles.

In turn, within the framework of the concept AN, several hypotheses of the form of existence of particles are established:

1 The hypothesis of a stable corpuscle AN - postulates that the system passes into the state of a corpuscle and remains in this state stably, maintaining its stability regardless of the environment. The influence of the medium on the stability of the corpuscle system is minimal. This hypothesis in the concept of "wave dualism" postulates that a particle behaves like a wave, and not a wave as a particle.

This hypothesis is extremely untenable because there are such phenomena as the field and the wave function, which can exist independently of the particle [16] [18].

Similarly, the propagation of the quantum field over infinite distances plays against the hypothesis of a stable corpuscle. This hypothesis is considered only as a simple model, for supporters of a simplified view of reality.

1 The hypothesis of a flexible corpuscular system AN - postulates that a corpuscle exists only when it is necessary for a set of systems. As soon as the need for the corpuscular manifestation of the system AN disappears (for the system of the set in which it is located), the corpuscle system, as a result of the entropy AS, comes to the wave form of the system, to the potential form of the system, or other forms, including the form of energy. This hypothesis explains the existence of virtual particles and the appearance of the Alpha universe, in the standard cosmological model [8]. Так же данная гипотеза предсказывает, как следствие, гипотезу "испарения вселенной". (see the section 18)

2 The spin-system hypothesis of particles - postulates that some types of particles, such as photons and quarks, exist only as potential systems.

Registration of a number of fundamental particles — this is the registration of the point or area of interaction in which the wave or potential system collapses.

The hypothesis also refers to other possible behaviors of systems that are perceived as corpuscles or particles. Including the existence of “particle ” systems in potential states. The basis of this hypothesis is the conclusions from the EPR [39 *Previously we proved that either the quantum-mechanical description of reality given by the wave function is not complete or when the operators corresponding to two physical quantities do not commute the two quantities cannot have simultaneous reality. Starting then with the assumption that the wave function does give a complete description of the physical reality, we arrived at the conclusion that two physical quantities, with noncommuting operators, can have simultaneous reality. Thus the negation of leads to the negation of the only other alternative . We are thus forced to conclude that the quantum-mechanical description of physical reality given by wave functions is not complete.*] and observations of conditional point centers of equilibrium in macro-objects. As a visual example: the point of mass for macro-objects can be taken as a particle if the macro-object is extrapolated to the” world of quantum scales”.

Spin-systems — this is a fairly generic term. Subsequently, this term requires correction, which systems should be attributed to spin-systems, and which should be allocated to a separate class (potential or conditioned systems). The general idea of "actual spin-systems" in analogs to the "spin-particle" system is a system that cannot exist in the form that is required of it. This system must exist either potentially, or conditionally, or in a "personal subspace"(the most actual representation is in the potential form of the system). Although the concept AN state that if you can observe the rotation of a particle, then the spin [3 Articles with a letter "С" “спин”] will either be observed as a rotation, or the spin system will cause a complex form of entropy AS for the particle, with an unpredictable observation result. Thus, an attempt to observe spin within the framework of the theory SAN will lead to an anomalous behavior of the system of a particle, or a set of systems including a particle and an observer. Abnormal behavior refers to the unpredictability of entropy AS and the analogy with the Zeno effect.

Spin-systems are also understood as: spin, photon, quark, virtual particles, potential systems, energy, field, space, and time. The attribution of the quark to spin systems is due to the fact that the quark does not exist in the free state, only in the state of the particle system. The concept AN postulate that a quark exists only when it is necessary for the interaction of a particle, at any other moment a quark does not exist, and it is a potential system.

The attribution of time, field and space to spin systems is conditional and biased because these are full-fledged systems AN. The reason for assigning these systems to spin-systems is that they, like the spin-particle, are potential systems that exhibit physical properties independent of particles: expansion and curvature of space [7], not the discrete propagation of a field interacting at any point of its locality, the gravitational waves emitted by a body exist independently of the further motion of that body [18].

10.Experiments confirming the concept AN in the macro world

The elements of the physical reality cannot be determined by a priori philosophical considerations, but must be found by an appeal to results of experiments and measurements. A comprehensive definition of reality is, however, unnecessary for our purpose.

[39]

For a clear empirical view of the systems, several experiments will be presented.

In the concept AN, a very large number of examples can be presented that assert the systemic nature of reality and the observation of entropy AS for systems AN. Before presenting the experiments, I will clarify:

The "Concept of Absolute Numbers" asserts the primary systemic nature of reality. The system AN defines the hierarchy " system → matter", in the formation of reality, and the value of the "system AN > matter" is set.

Matter — is only a relatively stable form of a system AN, or a set of systems AN. This form of the system AN is the result of the entropy of a set of systems that include matter. As a consequence: the behavior of a material object is determined not by the matter that makes up its set, but by the system AN and the entropy AS, within which this object is represented.

Conclusion: a change in the " system AN of an object", while preserving the" material nature", will lead to a shift in the equilibrium point of the entropy AS, for the set of systems that include the object.

❖ **First experience:** "Rolling cylinders with an inclined plane" [19].

Presented: National Research Nuclear University MEPhI (Национальный исследовательский ядерный университет "МИФИ").

Step 1: Presents three cylindrical objects of equal mass and geometric size. Each experience object is differentiated by a different color: "red", "blue", "black". From the point of view (concept) of the material nature of reality, all three presented objects are equal in the physical-plane.

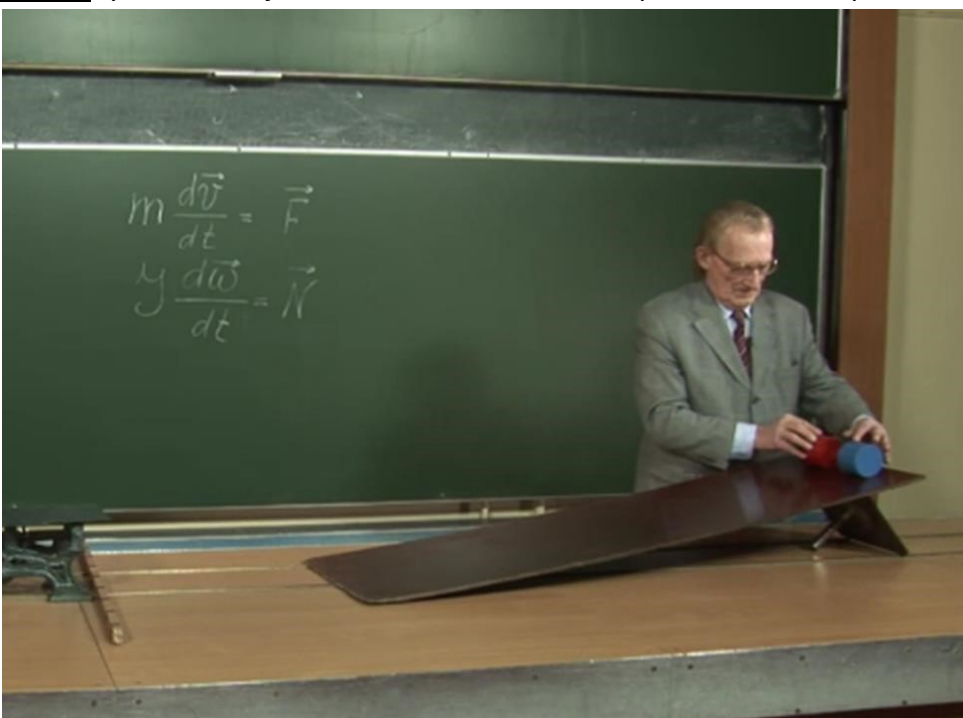


Picture 14



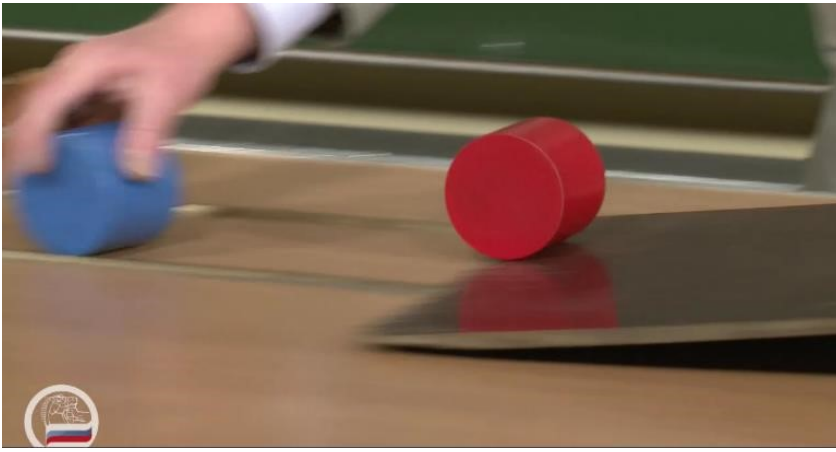
Picture 13

Step 2: Cylindrical objects: "red " and " blue", are placed on the top of the inclined plane.



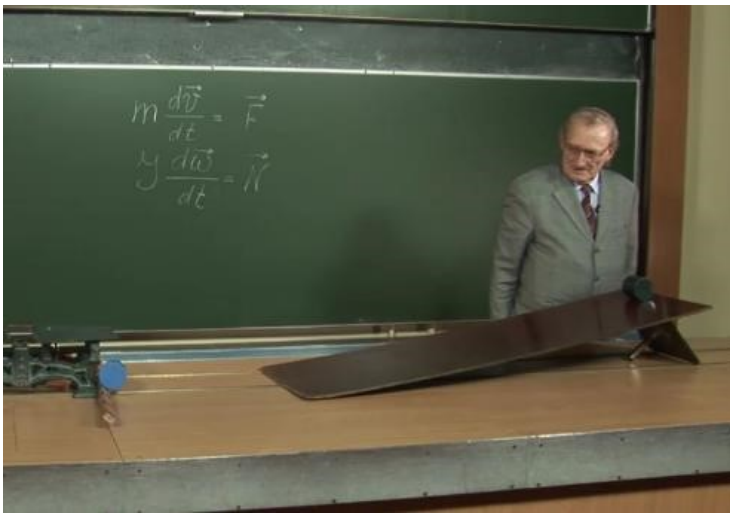
Picture 15

Step 3: Cylindrical objects: "red" and "blue", under the influence of gravity, roll down from an inclined plane. We register that the blue cylinder rolls faster than the red one.



Picture 16

Step 4: The cylindrical objects "black" and "blue" are placed on the top of the inclined plane. The blue cylinder rolls off the inclined plane, while the black cylinder remains on top of the inclined plane.



Picture 17

Step 4: We analyze the system structure of objects: "black", "blue", "red" cylinders..



Picture 18

The blue cylinder is a homogeneous physical body.

The red cylinder is a pipe cut, a hollow cylinder. The entire mass of the "red cylinder" object is located on the periphery of the geometric structure of the object. That is, the system AN of the "red" object differs in the geometric arrangement of the mass.

The black cylinder-differs from the red and blue cylinder by an asymmetric mass distribution, relative to the geometric axis of symmetry. Inside the object there is cargo is located that shifts the center of mass from the axis of geometric symmetry of the object.



Picture 19

In this way, you can position the black cylinder on an inclined plane so that gravity is applied to the right of the cylinder's axis of symmetry. The moment of the pair: the reaction force and the gravity of the black cylinder hold the object on an inclined plane, being the result of the equilibrium of the systems AN. I.e., we observe the displacement of the equilibrium point for the entropy AS set of systems: "black cylinder" – "inclined plane" – "gravity".

Conclusions of the experience:

The system AN "Translational motion of a body" is determined by its mass and the vector sum of the forces applied to the body.

$$m \frac{d\vec{v}}{dt} = \vec{F}$$

$$m \frac{d\vec{v}}{dt} = \vec{F}$$

The "rotational motion of a body" system is determined by the moment of inertia, that is, as the mass of a body is distributed over its volume in system AN. The rotational motion depends on how the force vectors are applied to the body.

$$J \frac{d\vec{\omega}}{dt} = \vec{N}$$

$$J \frac{d\vec{\omega}}{dt} = \vec{N}$$

Since the blue cylinder was homogeneous, the moment of inertia of the blue body was lower and the blue body rolled with greater angular acceleration. The speed of rolling bodies was determined not by the material nature of the objects, but by changes in their AN systems, including the geometric structure of the bodies. The speed of rolling bodies was determined not by the material nature of the objects, but by changes in their systems AN, including the geometric structure of the bodies. Thus, the reality of objects in the experiment

was determined not by the material nature of the objects, but by the nature of the systems AN and their equilibrium AN, within the framework of the system entropy AS.

At the same time: before the empirical observation of the experiment, it was impossible to predict the solution of the entropy AS and the equilibrium point of the systems AN. The inability to predict the solution of the entropy AS for the equilibrium of systems is a key postulate of the concept AN. The prediction of the solution for the entropy AS can only be of a probabilistic nature [see page.17]. The only exception for predicting entropy AS is the modeling method, which creates a “twin-system” that is close to the analyzed system. The probability of predicting the entropy AS solution for similar systems is higher. In the concept AN, similar system models are a representation of a single system. The difference between similar systems is determined by the set of systems in which these systems are included.

The entropy AS of similar systems is corrected as a consequence of the equilibrium with the set of systems AN in which it is included, while the similarity of the entropy solution for similar systems is more likely. Thus, the set of systems acts as a "corrector system (operator)" entropy AS for the system AN. **From all this, a conclusion is made about the probabilistic prediction of the entropy AS result for a system and a set of systems. And also, about the correlation of the accuracy of prediction with the accuracy of modeling a system or a set of systems, before empirical observation.**

This postulates and predicts: The need for experimental empirical verification of any newly constructed system AN (set) that has only been modeled and has not been observed empirically before. Because the displacement of the equilibrium point of the entropy AS is predictable only probabilistically.

Extrapolation of this experience can be performed with bodies consisting of a single homogeneous material (matter), defining the system of bodies as a “geometric shape”. Mentally imagining two objects of equal mass for the experiment: object A “cylinder body”, object B "geometric cube". Next, observe how in the framework of the “inclined plane” system, object A and B will roll under the influence of gravity. As a result, get a conclusion about what will determine the object and its physical behavior, the material nature or the system AN nature of the object, due to the entropy AS.

❖ **Second experience: “spring slinky”** [20] [21].

Step 1

The spring of the "slinky" is held at one end and stretches under the force of gravity to the ground

Step 2

The spring of the "slinky" is released from the hold end. The spring of the "Slinky" begins a free fall to the surface of the earth.

Step 3

An uneven fall of the “spring slinky ” system is registered, the lower end of the spring hangs in the air, the compression forces of the spring compensate for the forces of gravity and keep the lower part from falling.

Step 4

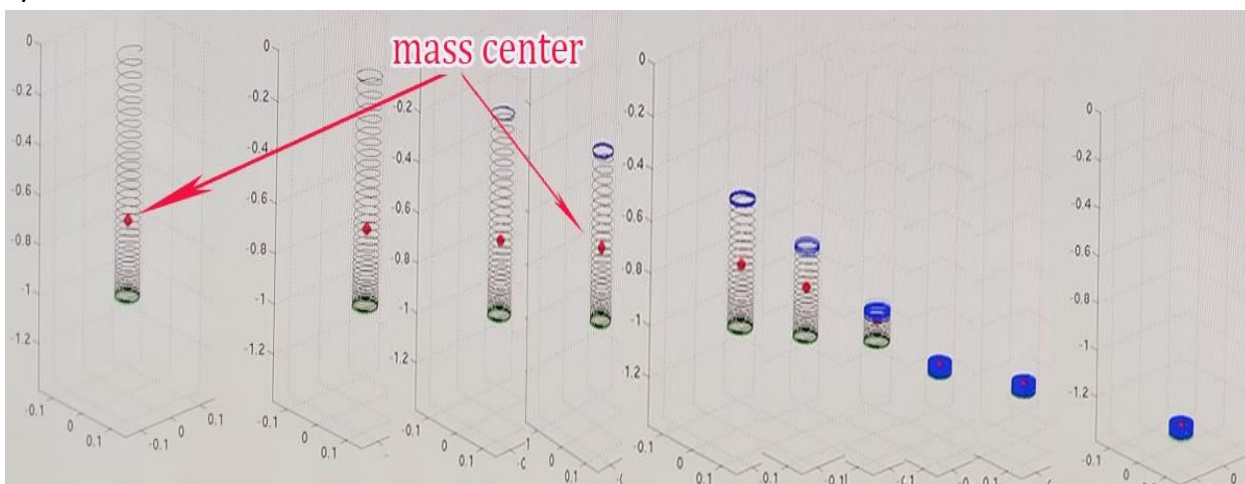
After reaching the upper end of the spring of the lower part (compression of the spring). The “spring slinky ” system keeps the lower and upper parts falling evenly.



Picture 20

Step 5

When analyzing the fall of the "spring slinky" system, a uniform drop in the mass center of the "spring slinky" system is recorded.



Picture 21

Conclusions of the experience:

As in the first experiment, a change in the equilibrium point of a set of systems AN is presented. The "spring slinky" system fell differently from other bodies, like a ball or a rock. As in the first experiment, a change in the equilibrium point of a set of AF systems is presented. The Slank spring system fell differently from other bodies, like a ball or a rock. The features of the behavior of the "spring Slank" system are the result of the entropy AS for the set of "spring-gravity" systems. In step 5, you can register the "mass center" point object. As mentioned earlier [see page 18], the mass center could be taken as a point particle in the case of observations in the "quantum world". At the same time, the center of mass is a visual representative of "spin-systems" and is something similar to the spin-particle. Based on this, the argument in the hypothesis of the "particle spin-system", stated earlier, is constructed.

Hypothesis particle spin-system – postulates that some types of particles, such as photons and quarks, exist only as potential systems. The registration of a series of fundamental particles is the registration of a point or region of interaction in which a wave or potential system collapses. The hypothesis also refers to other

possible behaviors of systems that are perceived as corpuscles or particles. Including the existence of "particle" systems in potential states.

❖ **Experience the third: "Tossing a parallelepiped" [22].**

Presented: National Research Nuclear University MEPhI (Национальный исследовательский ядерный университет "МИФИ").

Step 1

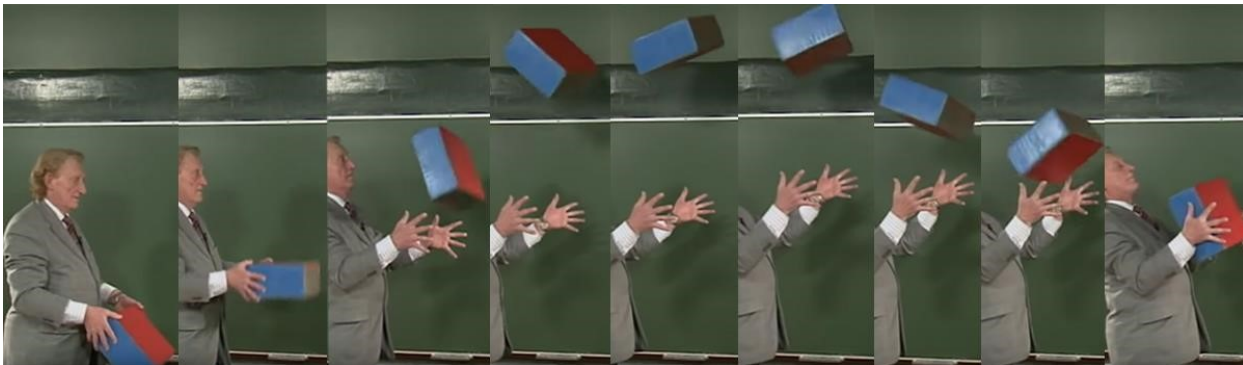
The parallelepiped is thrown with rotation relative to the axis of the maximum moment of inertia. The rotation of the parallelepiped is stable.



Picture 22

Step 2

The parallelepiped is thrown with rotation relative to the axis of the minimum moment of inertia. The rotation of the parallelepiped is stable.



Picture 23

Step 3

The parallelepiped is thrown with rotation relative to the axis of the average moment of inertia, for the "parallelepiped" system AN. The rotation of the parallelepiped is unstable, under the influence of the aerodynamic drag forces of the medium.



Picture 24

Conclusions of the experience:

In this experience, the same material object is represented, performing the same physical action.

As we can see, even in a single set of "parallelepiped-medium" systems AN, the entropy AS leads to different observations of the body's motion, as a result of changes in the system "The axis of inertia symmetry".

System "The axis of inertia symmetry" - is a spin-system and, without being material, has a direct impact on reality itself, causing the behavior of the material object "parallelepiped".

Thus, experience arguments the postulation of the concept AN of the systemic, rather than material, nature of reality. Matter in the concept AN is a form of the system AN and is a subordinate system, in the hierarchy of multiple systems (hierarchy "system \rightarrow matter"). Although matter can act as a system operator and determine the displacement of the equilibrium point of the entropy AS, however, in this case, the displacement of the equilibrium point of the entropy AS is a consequence of the systemic nature of matter. Matter itself does not determine reality in any way. All the physical properties of matter and the laws of physics are the result of the entropy AS for the "Alpha Universe" system AN.

❖ Fourth experience: "Motion of the mass center of a solid body". [23]

Presented: National Research Nuclear University MEPhI (Национальный исследовательский ядерный университет "МИФИ").

As the object of the experiment, a cardboard of irregular geometric shape with color markings is used. The center of mass of the object is marked with red paint. The experiment consists in the empirical observation of the plane motion of an object, which is a superposition of translational motion and rotation around a geometric axis, which does not change its direction during the movement.

The plane motion of an object consists in translational motion together with the center of mass (red dot) and rotation around an axis passing through the mass center, in the reference frame in which the mass center is at rest.

We observe the flat motion of the experimental object in the image.



Picture 25

Conclusions of the experience:

The mass center moves in the same way as a material point (a conditional point particle) that has the mass of the entire body moves, under the action of the vector sum of all the forces applied to the body.

The mass center does not care how the forces are applied to the body. The free axes of inertia of anybody pass through the mass center. The mass center in the experiment moved along a parabolic trajectory.

The white dots marking the object rotated around an axis passing through the mass center.

In the reference frame in which the mass center is at rest, the trajectory of the white dots is a circle, with the centers at the mass center.

As in previous experiments, the movement of an object and non-material points, which are full-fledged systems of reality, is determined by the equilibrium state of all systems, that is, a consequence of the entropy AS for a set of systems AN. In addition, the entropy AS is observed for each spin system included in the

experimental object. The mass center, as mentioned earlier, can be taken as a point particle if the experiment was conducted on the scale of the " quantum world". The mass center in the experiment is observed as a full-fledged system AN that determines the behavior of the material object of the experiment.

11. "Quantum tunneling" in the concept AN [24]

As a confirmation of the systemic nature of reality and the concept AN, many more experimental examples and arguments can be given. As a model for the consideration of other experiments and phenomena in physics, a constructive analysis of the tunnel effect will be presented. This example, like the others, will serve as a basis and method for testing and criticizing the presented theory SAN and the concept AN.

Based on the concept AN, the tunnel effect does not contradict classical mechanics in any way. The concept AN of the nature of interaction in classical mechanics asserts the interaction of objects on the basis of some laws of physics, while quantum objects interact within the framework of other laws of physics. This view of the concept AN postulate the nature of the laws of physics themselves.

The laws of physics, according to the concept AN, are a particular solution of the entropy AS, a solution for the equilibrium of a set of systems AS. The similarity of the laws of physics, for different sets of systems, is a consequence of such a solution of the entropy AS, in which the minimum allowable structural solution is allowed, for the interaction of the maximum variety of systems AN.

In the concept AN, systems AN, in addition to real states, also include potential states.

Real states — are those potential states that are the maximum possible in a set of systems AN, in which the systems of this set do not contradict each other (equilibrium AN). Which is analogous to the position of the *quantum Darwinism* [40]

Thus, the laws of physics are also potential systems. The reality of the laws of physics, for interaction, is determined by the need for these laws of physics, under which interacting systems AN do not flow themselves, or by the aggregate set of systems in which they are included.

Stating the above: the quantum tunneling, in the concept AN, is a consequence of the need for a set of systems within which the interaction takes place. The need for a tunnel effect causes the entropy AS and the set of systems comes to another point of equilibrium, at which the potential laws of physics become real, and within these laws there is an interaction of objects (systems), observed and predicted as a quantum tunneling. Such a property of reality, to determine within the framework of which laws of physics the interaction will take place, we will call: "plasticity of reality". The same property of" plasticity " is inherent in space and time, it is the property of time to flow at different speeds, in different systems, and it is the property of space to expand as a physical object, without being a material system.

This statement of the concept AN can be criticized by the existence and derivation of general laws and formulas that, within the entire set of systems, correspond to a particular difference in the laws within the different subsystems of this set. However, this argument will not be correct, since the concept AN also postulates the general entropy AS for the entire set of systems, i.e., it allows general physical laws for different subsets of systems. Such a phenomenon is a superposition of partial solutions of entropies AN for different systems. However, this statement predicts and asserts the possibility of interaction of systems according to the potential laws of physics, if the experimenter or a set of systems is able to create the need for the reality of such a law of physics (perform the role of the operator AN).

Returning to the consideration of the tunnel effect, we note that according to classical mechanics, a particle can only be located at those points in space where its potential energy is less than the total energy.

$$E_{kin} = \frac{p^2}{2m} = E - U$$

That is, the kinetic energy of a particle cannot be negative (classical physics), since in this case the momentum will be an imaginary quantity. If two regions of space are separated by a potential barrier, such that $U > E$, the seepage of a particle through it in the framework of the classical theory is impossible.

In the concept AN, this means that the tunnel effect is a contradiction for the systems, and the reality, in the concept AN, is a solution in which the systems do not contradict themselves in the aggregate set.

In quantum mechanics, this fact, the imaginary value of the particle's momentum, is not nonsense.

The Schrodinger equation with constant potential $U(x) = const$, in the one-dimensional case, it is written as

$$\frac{d^2\psi}{dx^2} + \frac{2m}{\hbar^2}(E - U)\psi = 0,$$

ψ — the desired wave function, x — coordinate, \hbar — reduced Planck constant, m — the mass of the particle, has the solution.

$$\psi = A \exp\left(i \frac{p}{\hbar} x\right) + B \exp\left(-i \frac{p}{\hbar} x\right), \quad p = \sqrt{2m(E - U)}$$

This solution applies to the situation as $E > U$, as and $E < U$. In the second case, under the exponents will be a real value due to the imaginary momentum — physically, such a solution describes the attenuation or amplification of a wave with a coordinate. The concretization, is determined by the boundary conditions.

Non-zero values $\psi(x)$ by $E < U$ indicate the presence of a certain probability of the particle entering a classically inaccessible area (barrier). If the barrier has a finite thickness comparable to this depth, then the attenuation stops outside the barrier — and the wave function of the transmitted wave corresponds to further propagation, with a lower amplitude.

So in the concept AN, quantum tunneling, for quantum systems, is acceptable as the consistency of systems, the reality of the quantum tunneling is determined by the necessity of this phenomenon in the interaction of objects (systems AN).

12. Discrete AN with the transition of systems to new forms.

Prediction of discrete entropy AS AN

As the simplest model of the system AN, we consider the system of a segment with two Everest points on a straight line. So, for example, the transition of the system "water" to different aggregate states: gaseous, solid, liquid, plasma, is a pattern of changes in systems when the value of the Everest point is exceeded. This pattern is a common property of systems AN. It postulates the discreteness of systems determined by the Everest points, which are due to the entropy AS.

When changing the discrete observation of systems, the systems can structure a new set, with a different point of equilibrium AN and, as a consequence, different patterns, for this set of systems. As an example of an empirical observation of such a phenomenon: macro (classical) and quantum physics, micro and macroeconomics.

Discrete, partial entropy of subsets, is also a form of uncertainty of systems within their Everest points, a form similar to the Heisenberg's uncertainty principle. This allows a set system to manifest in its subset differently from another subset.

It is also concluded that it is impossible to predict the equilibrium points for an unknown system and the consequence of its entropy AS. However, the entropy AS has the property of showing repeated patterns for different systems. For example: wave manifestations of systems, system asymmetry and fractality, similar aggregate states for different mothers.

The impossibility of predicting discrete entropy, without modeling, serves as a basis for refuting the Hodge conjecture.

13. System numbers. Experimental refutation of the Hodge conjecture

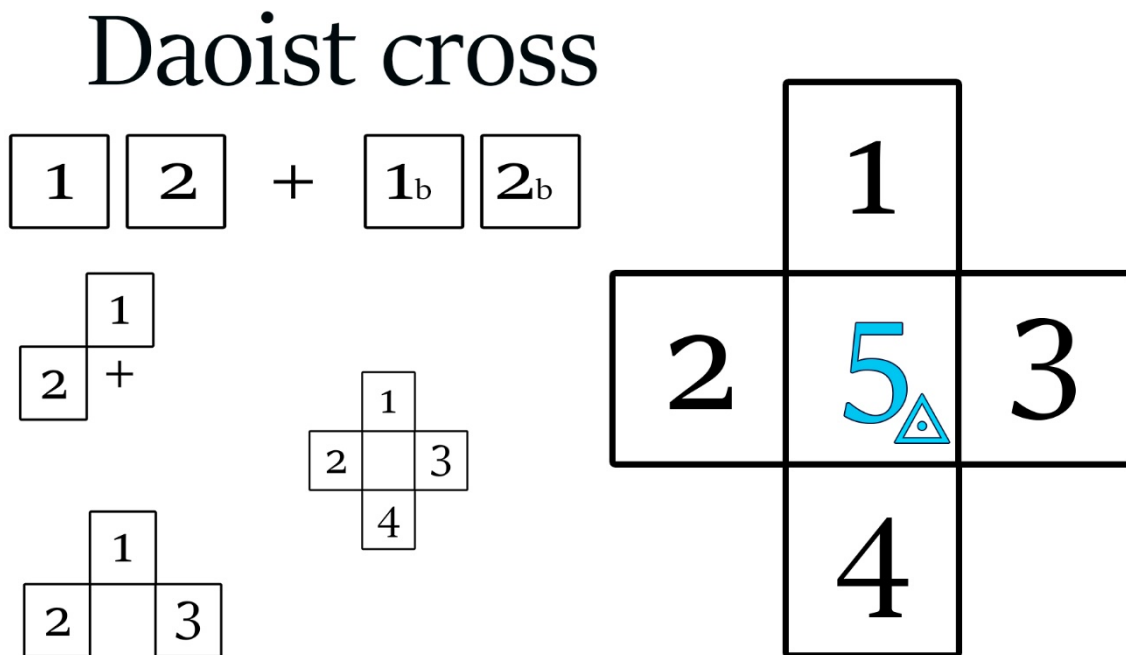
As a demonstration and verification of the concept AN, within the framework of non-material systems AN. Let's make an empirical experiment with the reality system AN "Mathematics".

Based on the concept AC: by changing the system nature of a mathematical operation, it is possible with an indefinite probability to cause the entropy AS of a set of mathematical systems in conducting a mathematical operation.

It is also important to note that the experimental result obtained will not be predictable in the framework of the Hodge conjecture and from the classical position of mathematics. The predictability of this result will be possible only after analyzing a ready-made non-standard system that caused an unpredictable form of entropy AS.

As a demonstration, present the expression "2+2"

Let's change conventional sign of the number 2 as the exact system value of the AH. Let's denote the unit of this operation system AN by the "Square". In this case, we will have the value of the number 2 as two systems AN" Square". Perform the operation of adding these systems in the form of a non-standard construction of squares. Get the geometric construction "2+2" in the system "cross".



Picture 26

Note that the number of squares of this cross is 5.

This operation in its entirety demonstrates a violation of the system of the addition operation. This requires you to separate this addition operation into a separate class – "system addition" ($+_{\Delta}$).

System addition (entropy) — is a non-standard mathematical operation that leads to the construction of a system that causes entropy AS for a set of systems of this operation.

Let's analyze the result obtained, in the entropy addition formula for this operation.

Let us denote the final result as the "Daoist cross" system (the author's terminology is based on the ideas of equilibrium in Taoism, similar to the ideas of equilibrium of systems AN).

Note that in the system "Taoist Cross " is a superposition of the number 4 and the system number 5Δ . In this case, to observe the formality of classical mathematics, we state the following expression:

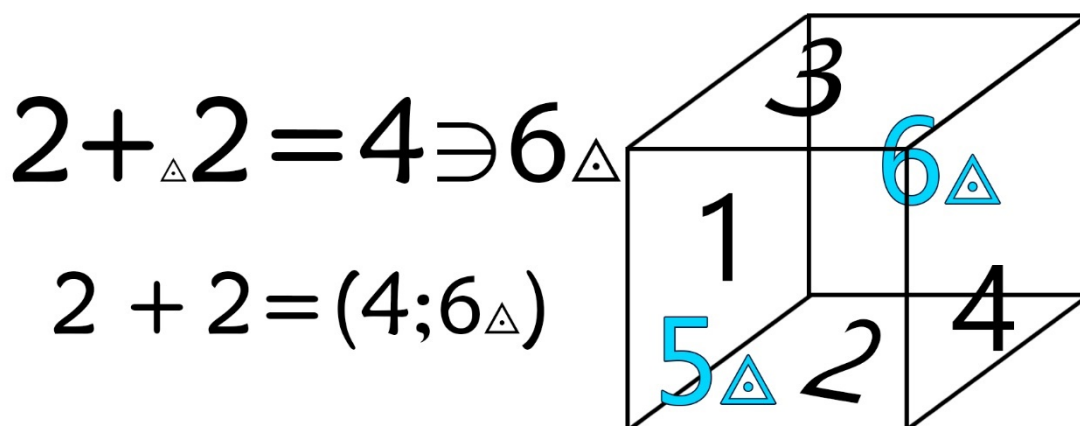
$$2 +_{\Delta} 2 = 4 \ni 5_{\Delta} \quad \text{by} \quad 1 \cong 1_{\Delta}^1$$

$$2 + 2 = (4 ; 5_{\Delta})$$

By this action $(+_{\Delta} ; 5_{\Delta})$, the resulting result was adjusted to classical mathematics, what is pure formalism. On the basis of the conducted, visual experiment, critics can object: about a private case of such a phenomenon and attempts at manipulation. However, there is no manipulation, the mathematical operations are generalised, and in this case the number 5 is represented as entropied Δ , while there is a debatable need for a more accurate classification of the number as an imaginary or real system number. The approximation of this mathematical operation will not be correct, because in the case of a change in the system, a causal change in the entropy AS follows.

Now we will conduct the following experiment, with a suggestion to predict other values for the operation "2+2", before demonstrating the new experiment Will conduct a new experiment with the same systems "Square". We break the equilibrium of the entropy AS by performing the operation in three-dimensional space.

Daoist cube



Picture 27

In the presented image, we can see the result of summation, the "Daoist Cube" system. Let us analyze and note the number of finite systems "Square". We get the result of the system entropy as the number 6Δ , for our non-standard mathematical operation.

And after the presented result, we are sure that the number of this addition is six. And it seemed to be predictable. However, we analyze this system and get a projection of the imaginary systems "Square" on each coordinate axis symmetric to the sides of the " Daoist cube".

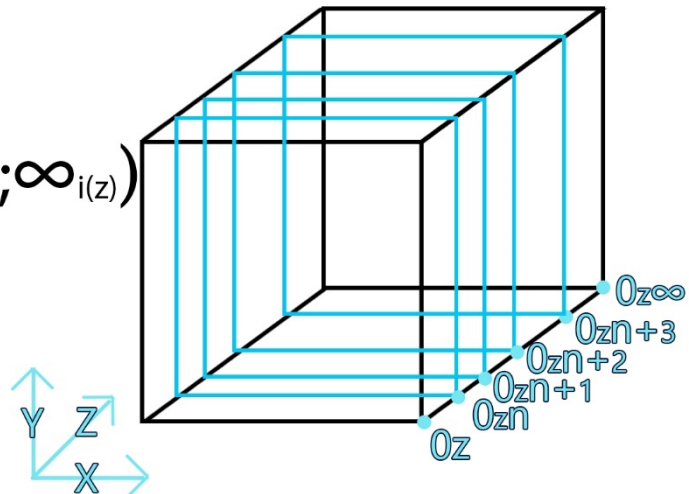
We get three infinities of imaginary systems "square", which form this system and are a consequence of its entropy AS. Denote this addition operation, with a violation of the equilibrium point of the set of systems AN, by the following expression.

¹ Two figures naz. congruent and, or equal, if one of them can be translated into the other by movement. Mathematical encyclopedia. - M.: Sovetskaya enciklopediya. I. M. Vinogradov. 1977—1985.

Daoist cube

$$2 +_{\Delta} 2 =$$

$$4 \ni 6_{\Delta} \ni (\infty_{i(x)}; \infty_{i(y)}; \infty_{i(z)})$$



Picture 28

$$2 +_{\Delta} 2 = 4 \ni 6_{\Delta} \ni (\infty_{i(x)}; \infty_{i(y)}; \infty_{i(z)})$$

We also note that for the observer, there are observation coordinates in which the "Daoist Cube" system turns into a unit – the "square-system". The result of such an observation, for the observer's system, is also a demonstration of the entropy AS.

It is worth noting that the result of the violation of the equilibrium of the entropy AS in these examples could not be predicted without modeling and analyzing the final result, or the model of the result system. Just as with the Heisenberg uncertainty, we get the uncertainty of reality, which is a consequence of the uncertainty of the equilibrium point for systems. The demonstrated experiment shows that even a mathematical operation, the result of which no one doubted, contains uncertainty in its systemic nature.

As with the square algebraic root of four, the final result depends on the refinement of the operation system. A change in the systemic entropy AS is always assumed as possible.

This concept AN demonstrates an experimental refutation of the Hodge conjecture [25]: in that *a change in the systemic entropy AS for the system is always assumed as possible, and the prediction of the result of a new equilibrium point for the entropy AS, without modeling, is probabilistic. In addition, we note that the final Hodge cycle in the inverse analysis of an algebraic variety in the concept AN will be a point, and a point is not a cycle of an algebraic variety. In this case, the number of points (states of the system) for the system of "algebraic variety" is equal to infinity. The set of points, as Hodge cycles AN, in its infinite number, is indeterminate. **According to the concept AN point, as a state of the system, it is unacceptable to approximate.** A point, like a Hodge cycle, is a complete system AN, conditioned by each point included in the set of an "algebraic variety". In addition, it is clearly shown that in addition to Hodge cycles, an algebraic variety can be represented by both system and imaginary numbers that are not Hodge cycles.*

The approximation in the concept AN is not completely correct, the approximation itself is a consideration of similar models, but not of the possible systems themselves (adjusting the value for the desired result). According to the concept AN, approximated systems will often be a general model of systems, so the probability of a similar entropy equilibrium AS will be higher for similar systems. But at the same time, a new point of entropy AS is always allowed, for the aggregate set of similar systems.

At the same time, the statement set out in the concept AN "...Can also understand a point as a frontal projection of an imaginary straight line, and a circle as a frontal projection of an imaginary sphere. "(chapter №1 Non-standard analysis AN) complements this refutation of the Hodge conjecture, since the projected points, as well as the segments, are Hodge cycles in systems of an algebraic variety. That is, any system of an algebraic variety can be represented as a point on some coordinate axis, which will be this algebraic variety, as a geometric system.

Attempts at a more thorough approach to the formulation of the Hodge conjecture will only be a fitting of the systems of the "algebraic variety "to a given point of equilibrium of the entropy AS for the entire set of these systems, that is, bringing the" mathematical expression" to the biased result.

14. The hypothesis of perpendicular (orthogonal) subspaces. Two-vector causality.

The "wave time model " hypothesis

A point in the concept AN is also a system AN, i.e., $0x$ must be a form of infinity, what corresponds to reality.

A point - is the intersection of an infinite number of imaginary lines.

At the same time, position a point is determined, by an infinite number of other points on the segment. Such conditionality in the AF concept is called two-vector causality (2VC).

$$0 \rightarrow 1 \rightarrow 0 \rightarrow 1 \rightarrow 0 \rightarrow 0a1 \rightarrow 0 \rightarrow 0b1 \rightarrow 0$$

$$0 \Leftrightarrow 1 \text{ (2VC)}$$

The same conditionality is also a consequence of the analysis of simultaneous interactions, where the end result determines the beginning. Two-vector causality (conditionality), a very important element of entropy AS. However, here the two-vector conditionality comes into conflict with the Copenhagen Interpretation. Because in accordance with 2VC, in time, the final result determines the beginning. Despite the uncertainty of the result, as in the cases with Heisenberg uncertainty, the final result in the framework of 2VC allows soft determinism (deviation of values between Everest points). This property of uncertainty 2VC is described by the following saying – "All roads lead to Rome!" (".

The postulate of the theory SAN "All roads lead to Rome!" substantially aligns and complements the concept AN with the Copenhagen Interpretation:

- 1 The initial position of the system in time and the final result are represented by infinite possible and impossible states of the system simultaneously.
- 2 The discreteness of the set of systems AN, with respect to a subset of their systems, will be the end point of the solution of the entropy AS. Thus, the solution of the entropy AS for subsets, the final result of the set, is allowed as one of the many options. That is, a set of solutions of systems of subsets is allowed with the same final result in the system of its set. To implement the endpoint of a set, multiple systems that are a subset can be implemented simultaneously. [16]
Thus, the subset acts as a "road", and the end point of the set as "Rome".
- 3 The number of subsets (roads) is determined by the entropy AS and its operators. Such a number can represent an infinite set, but this set will be limited to the Everest points and represent an acceptable area of uncertainty.
- 4 The end point (Rome) can be represented by several variants, but in this case all the acceptable results will also determine the initial position. Since in the concept AN, all real and potential systems determine the entropy AS, and therefore 2VC.
- 5 The possibility of multiple end results corresponding to the beginning of the path and defining this beginning in 2VC is consistent with the Heisenberg uncertainty.

6 The possibility of several final results that correspond to the beginning of the path and determine this beginning in 2VC, give grounds to assume the inhomogeneity of the "time "system and formulate the hypothesis of the "wave model of time".

7 All possible results of the solution 1a, 1b,1c orthogonally define themselves through the starting point within the entropy AS of their uncertainty set.

8 2VC complements the general cosmological model with the concept that the Alpha universe itself is the cause of its appearance.

9 A general idea of 2VC, predicts an analogy with the collapse of the wave function [9] [34], in time coordinates. $Vt(x) = \frac{T(x)}{t\Delta} = \infty$ by $t \Delta = 0$. If the wave function collapse is instantaneous for the time coordinates, then there is also a "causality reduction" for the time coordinate vector, postulating causal in zero segment of " time-time". This reduction of causality determines the discreteness of the permissible values and is the basis of the entropy AS ASP.

Considering the hypothesis that the Alpha universe may be the cause of own appearance, it is worth noting that the Alpha universe may not determine the full set of its reality, since a sufficient solution of the entropy AS is a solution of the form " wave function". The more complex structure of the Alpha universe system gives grounds to put forward an argument about the supplement of the 2VC system of the Alpha universe by the ASP operator.

The "orthogonal subspaces" hypothesis, represents an alternative version of the multi-world interpretation of quantum mechanics [26]. Since, in the concept AN, if complex quantum interactions are necessary, is allowed the existence of these interactions in personal subspaces. Since the concept AN postulate the systemic nature of reality, by means of solving the entropy AS, the consequence of the admissibility of such a solution is the appearance of orthogonal subspaces, with the analogy of the birth of the Alpha universe [7]. What is described as the postulate AN: "If a set of systems, in their equilibrium, require the reality of system X, then system X will become real ".

Thus, the existence of parallel universes for quantum interactions is impractical within the framework of entropy AS, since this complicates many systems and potentially leads to even more paradoxes. At the same time, orthogonal universes will not cause complication of sets of systems and contradictions because they will not correlate with each other and represent isolated possibilities of realizations of non-contradictory universes. Thus, the creation of orthogonal subspaces for the necessity of quantum interactions seems to be a more rational solution of the entropy AS. For example, a spin-system, the rotation of a particle, may exist in the personal subspace of that particle, before the spin is determined by the operator and after the spin direction is determined by the operator (an alternative version of the potential nature of the spin-system). The orthogonality of the subspace also allows instantaneous interactions, if the time coordinate becomes orthogonal when solving the entropy AS.

The "wave time model " hypothesis is presented as a possible model, a consequence of the conclusions of the theory SAN. First of all, this hypothesis requires such a physical phenomenon as the discreteness of time. The discreteness of time, as a necessity, arises during the analysis of the standard cosmological model [8]. If we extrapolate the standard cosmological model to the initial time of the universe's existence, then there is a contradiction in the meaning of an infinitesimal initial time. Thus, the infinitesimal, initial stage of the universe's life requires an infinite number of solutions to the entropy AS ASP. At the same time, each solution infinitesimal time potentially increases the probability of a contradiction. Thus, an infinitesimal chance of contradiction, when extrapolating the initial moment of the life of the Alpha universe, will lead to multiplying this chance by an infinite number of solutions, and to the fact that the Alpha universe will contradict itself,

with a chance $0.00...01\% \times \infty = 100\%$. At the same time, using the example of the "spin-particle" and "potential energy" systems, we can hypothesize that for some first instant of the Alpha universe, a value of conditionality is acceptable, similar to the time period of the system preceding the adjustment of the "Heisenberg uncertainty" conditionality by the operator. At the same time, the initial moment of time of the Alpha universe does not assert a further discreteness of time equal to this initial moment, since the system of "time of the Alpha universe" does not need to follow such a dimension of the discrete value. But the very possibility of discreteness of time will speak about the admissibility of such a solution to the entropy AS.

Further, the hypothesis of the "wave nature of time" is supplemented by Heisenberg's uncertainty, as the uncertainty of reality itself. So, if we assume the uncertainty of the solution for reality, but at the same time the implementation of all options, then this allows for several solutions to the reality of the Alpha universe within the framework of the sequential discreteness of the time system. Where, for each discrete value of the system "time", all valid solutions of the entropy AS are allowed with equal probability, the past represents the inhomogeneity of the acceptable solutions.

This position is supplemented by two more conclusions. The first conclusion: about the finiteness of the universe, if the universe is finite in time, then there is an Everest point in the time of the universe Alpha. This point will be extrapolated as the point of the segment, the projection of the circle. Since the time system is a coordinate axis, similar to the coordinates of space, the absence of time behind the Everest point will mean the origin of coordinates. Thus, we get the conclusion two: the total time value of the reality of the universe Alpha is a discrete quantity, an analogy of the reality cycle. At the same time, within the framework of the hypothesis of the "wave nature of time", the Alpha universe will, with some probability, accept all possible variants of the value of its reality each new cycle. At the same time, it solves the paradox of changing the past. So, if we assume time travel, then according to the hypothesis of "heterogeneity of time", the traveler will find himself in the past, which, most likely, will not correspond to the past of his reality. Changing this past does not change the reality of the future, its universe. This change in the past will only be true for the discrete cycle of the universe, in the future of this cycle.

Thus, the hypothesis of the "wave nature of time" postulates the model of the time system as a vector-the sequential cyclicity of reality (sequential universes). Thus, the vector-sequential cyclicity of reality allows all possible potentials of the system ASP to be realized, observing the concept AS in the formation of reality and allowing a "dice game".

15. General mechanics of reality. Ideas about "nothing".

Cosmological expansion of the space of the Alpha universe

While we have thus shown that the wave function does not provide a complete description of the physical reality, we left open the question of whether or not such a description exists. We believe, however, that such a theory is possible. [39]

We have thus seen how classical domain of the Universe arises from the superposition principle (postulate (i)) and unitarity (postulate (ii)) as well as rudimentary assumptions about information flows (postulate (iii)), and a few basic facts about states of composite quantum systems (including their tensor nature, often cited as additional "axiom (0)"). [40]

The conflict of systems is the basis of the cause of the entropy of the average state. Interactions are a type of systems AN that reflects changes in the parameters of the system or the entire system, is a consequence of the regularity established by the entropy AS for systems, or is a consequence of the conflict of systems and potential states of a set of systems that lead to a particular entropy AS characteristic of this case of interaction (system AN).

"Nothing" in the concept AN – this is also a system, which is understood as a set of unrealizable potentials, states of systems and the systems themselves, for a set of systems AN of a certain universe X. At the same time "the "real nothing" in the AC concept does not exist, because the "real nothing" in its concept refutes itself and contradicts its existence. Thus, within the framework of the concept AN, the potential system "real nothing", for all systems ASP, is defined by the entropy AS ASP as impossible, the value 0im. This concept AN of "real nothing" is of key importance, because of the existence of potential systems that underpin the ASP.

Thus, potential systems AN exist because of their potential and the impossibility of non-existence, which becomes the " law of potentiality".

Potential systems, in their consistency, form consistent sets of systems AN. The regularity of the formation of the set is the possibility of the existence of the ASP system "set", which does not contradict a number of potential systems. The formation of sets is based on the principle of " equilibrium". The process of transition of systems AN to the equilibrium of consistency, within its set, is called the entropy AS.

Farther, such set-systems as the Alpha universe and reality are defined. Reality, for the "Alpha universe" system, is determined by the locality of the "matter "systems in the coordinates of the "space-time" system of the Alpha universe.

Within the framework of the reality of the Alpha universe, a number of entropies occur, the realization of the sets of systems of the Alpha universe. These entropies give rise to systems such as the laws of physics and space-time itself.

Thus, the reality of the Alpha universe, within the framework of the concept AN, is the entropy AS of the Alpha universe, which is involved in interaction with the "space-time" system of the Alpha universe. "Observer reality", in the Alpha universe system - is the discrete value of the " Alpha universe reality " in which a given observer resides. Reality is a consequence of the possibility due to the " pattern of potentiality" and the consequence of the entropy AS.

Since all systems exist, their reality is determined by how they are represented in the locality of space-time, i.e., in the set of all systems and the equilibrium of the systems of this set (entropy AS). This concept AN postulate that systems AN are represented by an infinity of potential states. If we consider the concept AN on the example of the density matrix theory [28], this means that all physical systems are constantly in a mixed state, which is a set of potential states. The registration of pure states, in the concept AN, is the result of observing the equilibrium point of potential states caused by the system operator (corrector). At the same time, even after the registration of the pure state, of the system AN corresponds to an infinite number of imaginary states (potential states). In the concept AN, the pure state acts as sufficient for the equilibrium of a set of systems during interaction. The observed pure state is the point of equilibrium of the systems AN (which are the totality of their states) in the interaction, being a consequence of the entropy AS of all imaginary states of the systems.

All these conclusions together complement the basic formula $0x * \infty x = 1X = X$

Where $\infty x = \infty_{\Delta} x + \infty_{SpX} + \infty_{ix}$

$\infty_{\Delta} x$ – states of reality of system X, as a consequence of the entropy AS, Δ .

∞_{SpX} – spin-states of the system, conditional states of systems that complement the real states, as necessary for the equilibrium of the systems Δ . As an example, the states of the Heisenberg uncertainty system.

∞_{ix} –imaginary states, all possible potential states of the system that are not part of reality. Which is part of the "conditional nothing " system, for a given X system. In the time coordinate, the state data can take the value $\infty_{\Delta} x$ or ∞_{SpX} , for a certain period of time.

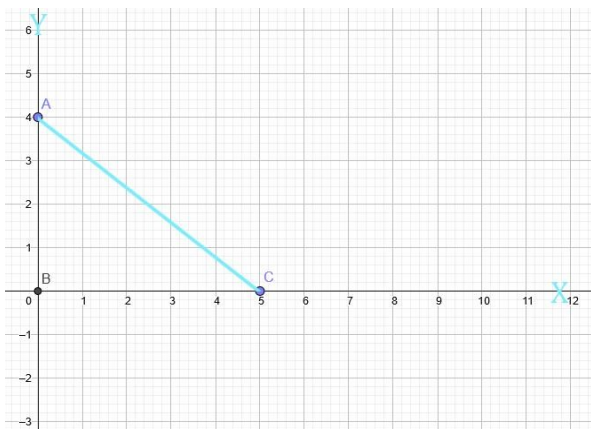
In this case, it is allowed that $\infty \Delta x$ can be a finite number of, n_x , states of the system unequal to infinity. $\infty X = n_x + \infty iX + \infty SpX$. With the caveat that if we consider the system X in the time vector to which the system X belongs, then in a given time, a finite number of n_x states of the system must belong to each point of the time coordinate. And for any finite time, value, the number of points of times is equal to ∞y . And in this case we get:

$$\infty X = n_x * \infty y + \infty iX + \infty SpX = \infty X + \infty iX + \infty SpX$$

As an empirically observed, expounded mechanics of the reality of AN, there is such a physical phenomenon as the expansion of the cosmic immaterial space of the universe [29] [3 Articles with a letter "P", "раздувающаяся вселенная"]. Which, in the concept AN, under the assumption of the infinite size of the universe Alpha; = ∞_g , can be represented as $\infty_{gx} + 1_x = \infty_{gy}$. Thus, being an immaterial system, the system AN "space of the Alpha universe" exists as a full-fledged physical object that obeys the laws of physics and the consequence of the entropy AS. When expanding, the "space of the Alpha universe" system AN change its value, which can be defined as the dimension. Then, even with the infinite size of the Alpha universe, the change in the dimension of infinity will lead to the expansion of this infinity. In addition to this, we can add the position of the concept AN and ASP: the expansion of the Alpha universe is a consequence of the solution of the entropy AS ASP, because in the absence of such a phenomenon, the Alpha universe, after the radiation of the gravitational field in the first fractions of a second of life, in "its density" would correspond to the "Schwarzschild radius" [3 Articles with a letter "Ч"; "чёрные дыры"], after that, the universe would instantly reach the end point of its existence. Thus, the contradiction of the set of systems of the Alpha universe as a result of the entropy AS defines the "lack of expansion of space" as a paradox and impossibility, while the expansion of space itself is defined as a natural necessity.

16. The model of consciousness as an AC system. Assumption of uncertainty in system numbers

As discussed above, in the section 3 "Introduction to spin-systems and entropy AS" [p.10], there is a model of a system with the imaginary side of a triangle, for two segments.



Picture 9

The presented models, the spin-system of the AC side and the spin-system of the triangle "ABC", are considered as an extrapolation of the AC concept to the model of human consciousness.

If we take as a basis the biological processes occurring in the human body, then it is possible for consciousness to exist in the form of a full-fledged system AN, while consciousness itself will be a spin-system for the human body. At the same time, consciousness will not be a process of the brain, and in the concept AN

it will be its own full-fledged system AN that correlates with the processes of the human body. In this case, the system AN "consciousness" can be an immaterial real physical object and a two-vector causality of the correlation "organism \rightleftharpoons consciousness" of the entropy AS is allowed.

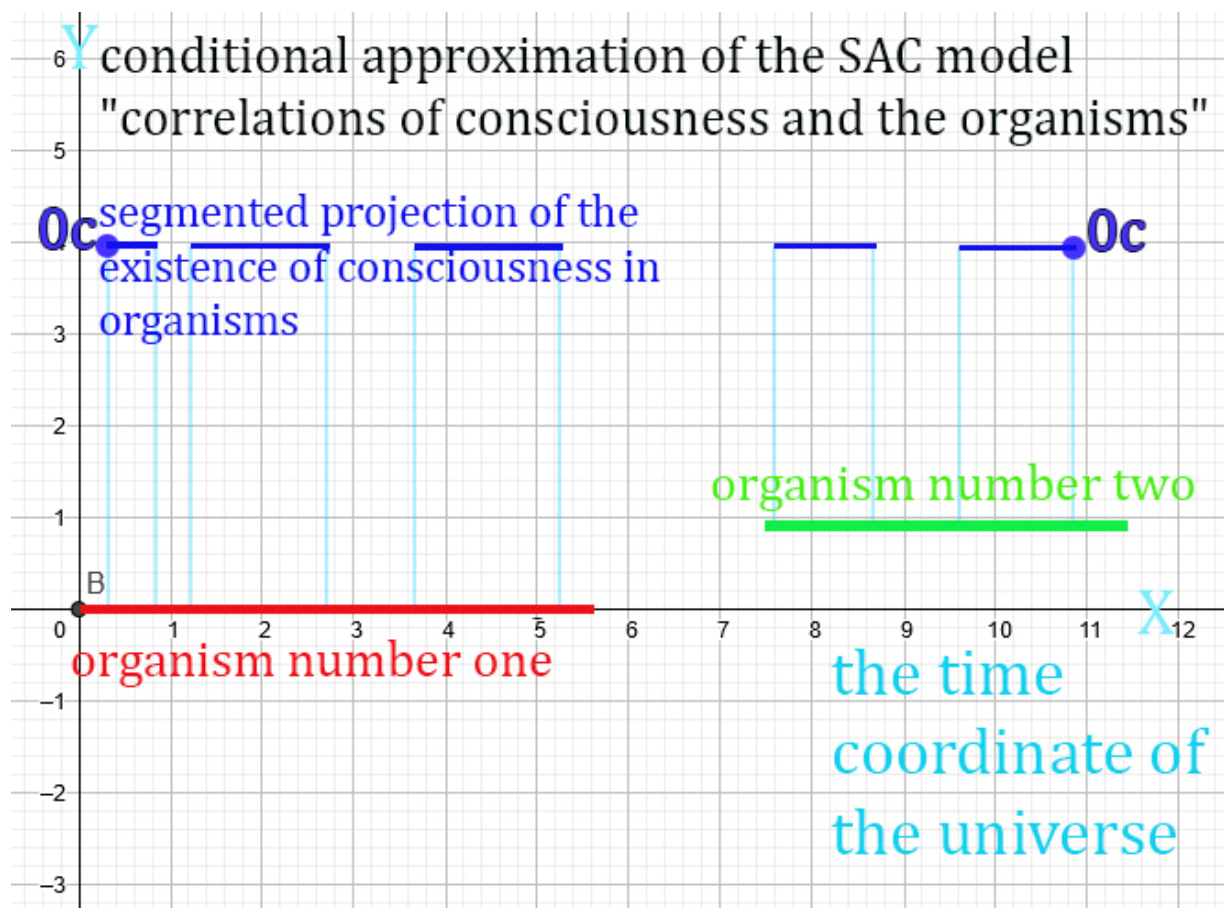
Thus, the concept AN offers a physical model of human consciousness as a spin system, relative to the human body, which is a consequence of the work of this organism. This concept distinguishes between the systems of the body and consciousness, when they are correlated with each other. At the same time, the concept AN, which postulates proper time for systems AN, explains the difference in the correlation of the observed time in the system of consciousness with respect to the surrounding world, based on the existence of proper time in the system of consciousness, with its own speed of time flow. So, with loss of consciousness or in some phases of sleep, the passage of time for consciousness, as a system AN, will occur instantly. That is, the concept AN states that the internal time of consciousness differs from the time of the environment and at the same time depends on the processes of the organism that form consciousness, as a result of the entropy AS. [30 2.6 *Vegetative State and the Intentional Action Inference*]

While many theorists are focused on explanatory correlates, it is not clear that the field has always grasped this, something recent theorists have been at pains to emphasize (Graaf, Hsieh, & Sack 2012; Aru et al. 2012; Koch et al. 2016). In other contexts, neuroscientists speak of the neural basis of a phenomenon where the basis does not simply correlate with the phenomenon but also explains and possibly grounds it. However, talk of correlates is entrenched in the neuroscience of consciousness, so one must remember that the goal is to find the subset of neural correlates that are explanatory, in answering concrete questions. Reference to neural correlates in this entry will always mean neural explanatory correlate of consciousness (on occasion, I will speak of these as the neural basis of consciousness). That is, our two questions about specific and generic consciousness focus the discussion on neuroscientific theories and data that contribute to explaining them. This project allows that there are limits to neural explanations of consciousness, precisely because of the explanatory gap (Levine 1983). [30 1.6]

Also, in this model of "proper time", for the system of AC consciousness, a new conclusion is postulated, based on the model of self-fruitful infinity (∞a), as a segment. The essence of this conclusion is that if consciousness, as a system of "time coordinate traveler", reaches the final point of functioning of its organism, it either shifts to a new point and exists there, or reaches the Everest point of "the possibility of its existence in reality" and finds itself at point $0c$, its own time of origin, because it cannot exist at other points and cannot exist in a state of "non-existence". That is, if the consciousness "x" cannot be generated by the entropy AS in another carrier further, then it turns out to be at the original point of its appearance. This conclusion postulates a cyclical model of consciousness.

Let us also clarify: the system "time coordinate traveler" is a representation of the decree value of reality, which is a cycle of a vector-sequential model of reality. [See.32 *The "Wave model of time" hypothesis*.]

Thus, the concept AN allows that consciousness "x" after the end of the life cycle of the organism, with some probability can be generated in other organisms. For the reason that consciousness is a form of the system AN, which is generated as a consequence of the entropy AS for the interaction of many systems AN. In such a model, there is no reason to strictly bind the consciousness of "x" to a single organism.



Picture 29 Conditional approximation of the SAC model "correlations of consciousness and the organisms".

The same concept, about consciousness as a form of the system AN, makes a prediction that if it is possible to simulate the work of the nervous system (biological carrier) on a mechanical carrier, such a carrier will also generate consciousness. On this basis, a theoretical, technical transfer of consciousness to another environment is allowed.

This model of consciousness, in the concept AN, assumes the hypothesis of "symbiotic consciousness". This hypothesis considers the reasons for the existence of a system of consciousness in biological organisms. If the formation of neural connections of the brain [31], somewhat similar to the example given with system numbers and the construction of the "Daoist cross", then such a principle could allow uncertainty of the final result of decision - making for consciousness. Similarly, although not reasoned, uncertainty is allowed in the nature of the system of consciousness itself, based on the reality of the uncertainty of system numbers and the uncertainty of Heisenberg.

Thus, the uncertainty in solving problems allows a deterministic organism to come to alternative and unpredictable solutions. "Unpredictable organisms" in the process of competition and natural selection can generate a greater number of behaviors, deceive and destroy more deterministic and predictable species of organisms.

Thus, life forms with the formation of the principle of the nervous system working on the generation of system numbers, in our hypothesis, become dominant. Such individuals, in addition to direct competition, also gain an advantage with deception of sexual partners and greater chances to leave a larger number of offspring, in relation to more standard behavior. Thus, the random appearance of a small number of individuals capable of a hypothetical non-standard model of decision-making, through the presented model of consciousness, in the shortest possible time makes these individuals dominant in their population, excluding options for the universality of standard behavior.

And if this hypothesis is correct, then human consciousness — is a natural tool of organic life, allowing the species to dominate, in the symbiosis of the system of a biological organism and the system of consciousness.

17. Grounds for the existence of the operator ASP

The main conclusion of the concept AN, after analyzing empirical observations of the implementation of this concept in the Alpha universe, is the importance of operator systems in the formation of reality.

The system entropy operator AS, can act as a set of systems, and one system. As an example, the system AC "human consciousness" is considered as a corrector system (operator), in the work of the biological brain.

Based on the current conclusions, you can define two types of operators. The first type of operator is a system that causes the entropy AS and shifts the equilibrium point in the set of systems AN. In this case, the introduction of other systems into the set, the equilibrium of the set of systems AN is shifted, but not disturbed and the entropy AS does not arise, with a different general solution of the equilibrium. The second type of operator is the system corrector of the set of systems that allow the uncertainty of the solution of the entropy AS, in which this system-set is in equilibrium at a set value, as an example, the wave function.

In the concept AN and on the basis of experimental obtaining of quantum effects on "macro-objects" [24] it is concluded that the entropy AS tends to a generally simple solution in the equilibrium of systems AN. This means that non-quantum systems AN potentially have several acceptable values at which the equilibrium of the systems is maintained. This conclusion is also based on the fact that systems AN represent an infinite set of their states, and such a set of real and potential values (states) allows for the uncertainty of the system itself (unless this system is specified by the value "X"). Similarly, potential states that act as contradictory, at the moment, for the system AN, can be valid after a certain period of time, which means a different point of equilibrium. Thus, all systems AN, even deterministic ones, are indeterminate when viewed at the time coordinate. In this case, time itself acts as a system corrector of all systems of the Alpha universe. This conclusion is very important because it is extrapolated to the time of the Alpha universe, since time is also an system AN, then the inhomogeneity of time is permissible in the concept AN.

At the same time, these conclusions are significantly revised from the point of view of the operator's systems. So, in the concept AN, the system operator does not just correct the system, but allows you to fully determine some values at which for the system AN, not several equilibrium values are acceptable, but only one value. This conclusion leads to the following opinion: the existence of a system of the operator ASP, which is not represented by either the "time" system or the "matter" systems.

The hypothesis of the "operator ASP" is based on several other conclusions:

- 1** The system ASP, as a set, could come to the equilibrium of all the systems AN of the Alpha universe, in the form of a superposition. The existence of time and space, for the Alpha universe and its systems, would not be necessary.
- 2** If the chance of the possibility of forming an operator system ASP is greater than zero, then in the absence of time in the ASP, this chance is realized in an infinite number of cycles of the entropy equilibrium AS ASP. At the same time, since there are no other systems of correctors that would not allow this system operator to be implemented within the entropy of the AS ASP. If there was a corrector system that would not allow the operator system to be implemented within the entropy AS ASP, then this system would already be a system of the operator ASP, with this adjustment.
- 3** The existence of some form of discreteness in the Alpha universe and such values as the speed of light, with the existence of the Heisenberg uncertainty phenomenon, as an acceptable value of the entropy AS, indirectly indicates that the determinism of the Alpha universe was corrected by the system by the operator ASP. Thus, the ASP operator system acts as a system structuring the Alpha universe as a more stable system AN, which includes the relative stability of the matter of the Alpha universe.
- 4** As soon as the system operator ASP becomes a valid value for solving the entropy of the AS ASP, the system operator can adjust the entropy of the AS. This means that the ASP operator system can prevent the

formation of other operator's ASP and other universes other than the Alpha universe. Or limit the number of possible ASP universes. I.e., the operator system, for the ASP, acts as a system that subordinates the entropy AS ASP, when other systems do not significantly affect the entropy AS ASP.

The values of the hierarchy of systems in the concept ASP is of key importance. Thus, systems that can potentially determine the shape of the ASP and the entropy AS will determine them, as a consequence of the fact that other systems potentially do not determine the entropy AS ASP.

5 The Alpha universe, based on the phenomenon of two-vector causality, can act as its own system operator. This means that the potential existence of the Alpha universe allows it to exist, and each ASP universe defines its own reality.

6 The existence of several operators, even universe operators, which only define their reality, will cause a conflict of ASP systems and is stated as a bad solution for the entropy AS ASP.

7 The entropy AS acts as an observable system formed without the participation of an operator and before the formation of universes, in the sequence ASP. The entropy AS immediately acted as a system of determinism of the ASP. The potential possibility of the system "entropy AS" is included in the potential form of the equilibrium of the system "reality". After that, all systems ASP will be implemented in reality, within the framework of the equilibrium systems reality-entropy AS. Thus, the situation looks similar for the system operator's ASP. The operator ASP, in such a model, acts as a finite complement of the reality-entropy SS equilibrium. The equilibrium of the form "reality-entropyAS-operator " is defined by me as the final complete potential equilibrium. After such a form of equilibrium, the system ASP must be realized in the form of universes as a regularity of its potential nature.

At the moment, it is impossible to state which system acts as an operator ASP. Whether the Alpha universe is a system operator, or whether a separate system acts as an ASP operator, is a matter of debate.

Also, at the moment, the TSA equilibrium model of the form "reality-entropyAS-operator" is the final one in the theory SAN. This model complements the concept AN, making the theory SAN complete, in its current description of the general nature of reality and the origin of reality.

18. The hypothesis evaporation of the universe

As an inverse extrapolation of the position of the concept AN, in the reasons for the appearance of the Alpha universe system, it is assumed that the absence of the need for a system AN implemented in reality leads to the transition of this system from the reality system to the form of a system of potentiality, or another model of the system.

An empirical example of this phenomenon is virtual particles [32] and the existence of a photon only in motion.

This leads to the very contradictory hypothesis of the "evaporation of the universe". The evaporation of the universe follows as a conclusion from the appearance of the universe in the framework of the standard cosmological model [8]. If the Alpha universe has a beginning, then the end point of the Alpha universe's reality cycle is also valid. At the moment, in the theory ASP, the main cause of the evaporation of the Alpha universe is the expansion of the space of the Alpha universe faster than the speed of light [29].

Thus, during the expansion of the Alpha universe, the expansion rate is allowed to be faster than the speed of light, thus obtaining a model in which the part of the Alpha universe's matter that is located at the boundaries of the superluminal expansion of the Alpha universe will be beyond the event horizon, for all the rest of the Alpha universe's matter. Thus, in the process of expansion of the Alpha universe, pockets of space

are allowed that are located beyond the event horizon, which, due to the speed of expansion of space, no interaction can leave, except for the von Neumann reduction (wave function collapse).

And at the same time, such pockets will have time to leave gravitational waves, i.e., residual gravity, after which the mass of the Alpha universe will be higher than the observed matter. Also, if we supplement this model with the hypothesis of inflationary expansion of the universe, we will get the possibility of significant evaporation of matter in the early stages of the life of the Alpha universe.

In addition, the concept AN assumes that the matter remaining in the pockets of space will begin to cease to be real, similar to the photon at rest, because remaining in the pocket of space, matter will lose the cause of its reality, even despite the von Neumann reduction, this phenomenon can be called the "evaporation of the state of rest" of matter.

In conclusion, the evaporation hypothesis of the universe assumes a further expansion of the Alpha universe, with an increase in the pockets of space until the complete evaporation of the Alpha universe.

19. General author's terminology

Non-standard analysis AN – It is an analysis of mathematics and its components, as full-fledged physical systems.

Absolute numbers (AN) – this is the representation of any number as a physical system (object) of reality. AN is extrapolated to any object of reality as a "system AN". Absolute numbers are represented by three absolute numbers: absolute zero, absolute infinity, and absolute one; $0x \times \infty x = 1x = X$

Entropy average state (AS) Δ - The system AN, which "does not lie" in space-time (except for hypothetical special cases), is a consequence of the contradictions of the ASP. Forms itself in "time zero", two-vector causality(determines). The entropy AS is a solution of the entropy AS for the ASP, in which the ASP forms a system of reality AN, a system of conditionality AN, and a system of unreality AN. The entropy AS acts as the equilibrium of the systems AN, in a certain set, and their states.

1x, Absolute unit (system AN) – a number or set of numbers that are taken as a unit and represent a system. Any number, value, or series of numbers can be represented as an absolute unit – and will be a set. It is written as either $1x$, $1A$, or $1an$. Where X is the "known" for uncertainty or the dimension "1X". Any system AN is the aggregate set of infinity of its states.

Everest point – a general term that refers to the maximum permissible values of the system. The name "Everest point" is taken from the wording "the maximum height of the mountains" [4 p.608], for the planet Earth. For any system, in the concept AN, several "Everest points" are allowed.

Self-similar infinity (∞a) – Infinity, which can be represented as an imaginary circle. In which the "Everest points" define the dimension and conditionally occupy one imaginary coordinate.

Infinity of the greatest set (∞_g) – a hypothetical infinity that is not self-similar but may be partially self-similar, can be represented as an "unclosed straight line". Represents the sum of all the segment on this straight line.

Spin-system – a generalized term, a system AN that is conditional in relation to a set of systems that exist in reality. Such a system is existing in relation to itself.

Absolute superposition (ASP) – the state of the Alpha universe and other possible universes at the point preceding the time of the Alpha universe. It assumes the existence of potential systems AN in the form of reality with the absence of the "time" system, which leads to a simultaneous equilibrium of these systems and their interaction.

The" state of rest" of matter (evaporation of the state of rest) is a hypothetical analogy to the state of rest of a photon, where any matter is represented as a photon. Such a state of rest is understood as the absence of the necessity of the reality of the system AN, represented by some matter.

A pocket of space – is a hypothetical region of space formed by the expansion of space at speeds equal to or greater than the speed of light, isolated from the universe by the event horizon and containing a small amount of matter that is not separated enough for the further possibility of existence in the reality of the universe.

Conclusion:

The statements about the nature of physical reality presented in the concept of "Absolute Numbers" do not in any way claim a violation of the laws of physics. The systems of absolute numbers presented in this theory, as a consequence of the entropy of the average state, determine within the framework of which laws of physics they will interact.

Of course, the current concept is presented as a general starting model of the theory SAN. It requires more in-depth analysis and elaboration.

In my subjective opinion, even the refutation of this theory and hypothesis will serve as a significant contribution to science and a better understanding of the nature of reality.

Despite the very bold conclusions, this concept does not promise miracles. The theory SAN postulates a general form of soft determinism and the limits of the possibilities of science, its Everest points. At the same time, it allows us to realize all the potential possibilities of science available in our Alpha universe.

The possibility of overcoming the Everest points, for the science of mankind, will be a question of the future in the theory SAN.

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