

My Understanding of the Phenomenon of Gravity

Robert Almazovich Yusupov

Independent Researcher

Vladivostok (Russia),

February 28, 2023

yusrob@mail.ru

This article presents my understanding of the phenomenon of gravity as a natural universal phenomenon. The phenomenon of gravity is, first of all, a phenomenon of the Universe, it is a phenomenon that takes place in the Universe. Gravity is the most important fundamental characteristic of the Universe. And only then, after, since the Universe is the largest object in nature, gravity is a phenomenon of the Nature. Outside the Universe, gravity does not exist. The phenomenon of gravity is not characteristic of a vacuum. Although, as described in this article with reference to my book “Theory of Nature”, in nature there is a predominant movement of material vacuum dust (MVD) to a special, selected area of nature (and the Universe), to the Singularity. But this movement of the MVD is not a manifestation of gravity. My understanding of the phenomenon of gravity is wholly and completely strictly dialectical-materialistic in its basis.

Key words: nature, objective reality, Universe, Singularity, matter, dialectics, vacuum, philosophy of dialectical materialism, physics, physical quantity, matter quantum, time quantum, length quantum, mass quantum, natural unit of matter (NUM), natural unit of time (NUT).

My understanding of the phenomenon of gravity is wholly and completely strictly dialectical-materialistic in its basis. My understanding of the phenomenon of gravity is based on the only true and scientific philosophy

of dialectical materialism and its outlook, understanding of the world, attitude, worldview.

I have the book the “Theory of Nature” (TN) published in 2021.

Within the framework of this book, about 40 fundamental problems of the universe, the foundations of nature, the structure and evolution of the Universe, problems of general natural science have been solved. These are also the fundamental problems of the foundations of physics and the foundations of cosmogony (cosmology). The problem of gravity, the phenomena of gravity in nature is one of such problems. This fundamental problem is solved within the framework of the “Theory of Nature” (TN). This article is devoted to solving this problem within the framework of the “Theory of Nature”. My understanding of the phenomenon of gravity is wholly and completely strictly dialectical-materialistic in its basis. This is a bright triumph of the scientific dialectical-materialistic worldview and the scientific dialectical-materialistic method of cognizing nature, its truths and its fundamental laws. The philosophy of dialectical materialism provided and armed me with this world outlook, understanding of the world and this scientific method.

And in my book “Theory of Nature” there is no place for any faith and there is no faith: neither religious, nor divine, nor idealistic, nor mystical, nor delusional, nor esoteric, nor exotic, nor primordial, nor any other, invented by our consciousness or imposed on our consciousness, faith. Faith has no place in the “Theory of Nature”. There is no place in the TN of various kinds and all sorts of conceivable and unthinkable varieties of delirium, lies, demagoguery, tyranny, arrogance, parasitism, anti-materialism, authoritarianism, enthusiastic admiration for authorities and worship of authorities, which are characteristic to one degree or another of modern physics and the modern physical party. Only facts, scientific facts and facts repeatedly verified in practice in the course of the social production labor activity of millions of people, of all mankind throughout the history of the development of human society.

Beforehand, a few words must and should be said on the whole and in general about the “Theory of Nature” and its author's view of nature.

The “Theory of Nature” is wholly and completely based on the foundation of the only true and scientific philosophy of dialectical materialism. TN fully and completely adheres to the dialectical-materialistic worldview, understanding of the world. TN in its research is entirely based on the scientific dialectical-materialistic method of cognition of nature.

It must be said that the theory of modern physics (TMP), including the theory of relativity (GR) is objectively and actually based on a fundamentally false and deeply anti-scientific bourgeois-idealistic philosophy (BIP). But this connection between physics and philosophy is hidden in every possible way, denied by the modern party of physicists, by the modern physical elite, by the entire modern physical community. Many physicists (the overwhelming majority of modern physicists!) adhere to anti-materialist positions, an anti-materialist worldview and understanding of the world, and openly oppose the materialistic understanding of nature with hostility.

So widely known on the physical forums of the “Runet” network is the physical guru from the dxdy.ru forum someone with the nickname “munin” literally states the following:

“... I repeat, in physics even the concept of such a “matter” is not used. If you really want to philosophize, then in physics somewhere in the prefaces it is written that “matter is substance and fields”. In modern quantum physics, even more strongly, “matter is fields”.”

Here is another pearl of this gentleman:

“I don’t care about “the definition of the concept of matter”. To spit in physics on this definition, understand? Physics is not philosophy, and deals with business, not chatter about words”.

And here are the teachings of the physical guru about philosophy:

“Philosophy is such a religion, no less stupid and harmful than any kind of Christianity, and no less sticky to human brains. Who escaped from it - he can do serious business. Whoever didn't save himself is doomed to forever get stuck in empty chatter, at the same time puffing up from his own importance.

The objective in these statements is the recognition of the denial of matter in modern physics as the basis of nature, as the main, basic in the conceptual apparatus of the theory of modern physics (TMP). Indeed, matter in the theory of modern physics does not occupy its proper, adequate place, relative to its actual position in nature, as one of the main essences of nature. The matter of nature is not reflected properly, adequately in the conceptual apparatus of the theory of modern physics (TMP).

And the second objective point in these statements of Mr. “munin” is the subjective (typical of the overwhelming majority of modern physicists) nihilistic rejection, the denial of the connection of physics with all kinds of philosophy, including, first of all, with the philosophy of dialectical materialism. The last statement of Mr. “munin” regarding philosophy is quite applicable to the bourgeois-idealist philosophy (BIP) and absolutely not applicable to the philosophy of dialectical materialism. This is important to recognize and understand.

Today the bourgeois-idealist philosophy (BIP) is in fact the state philosophy of all bourgeois countries. And the philosophy of dialectical materialism was the state philosophy in the USSR. The overwhelming majority of the modern physics party has a negative attitude towards philosophy, and in every possible way denies its organic connection with physics. This is an objective fact. But regardless of the subjective attitude to the philosophy of physicists, as F. Engels said in his book “Dialectics of Nature”, philosophy objectively, in fact, sits in the head, in the brains, in the minds of all physicists. I will quote on this occasion F. Engels:

“Naturalists imagine that they are freed from philosophy when they ignore or scold it. But since they cannot move a single step without thinking, logical categories are necessary for thinking, and they uncritically borrow these categories either from the ordinary general consciousness of the so-called educated people, which is dominated by the remnants of long-dead philosophical systems, or from the crumbs heard in compulsory university courses in philosophy (which are not only fragmentary views, but also a hodgepodge of the views of people belonging to the most diverse and for the most part to the worst schools), or from uncritical and unsystematic reading of all kinds of philosophical works - then in the end they still find themselves subordinate to philosophy, but, unfortunately, for the most part the worst, and those who most abuse philosophy are slaves of just the worst vulgarized remnants of the worst philosophical doctrines .

Whatever posture the natural scientists take, they are dominated by philosophy. The only question is whether they want to be dominated by some bad fashionable philosophy, or whether they want to be guided by a form of theoretical thinking that is based on familiarity with the history of thinking and its achievements.

Physics, beware of metaphysics! This is absolutely true, but in a different sense.

Content with the dregs of the old metaphysics, natural scientists still continue to leave some semblance of life to philosophy. Only when natural science and historical science absorb dialectics, only then will all philosophical belongings - with the exception of the pure doctrine of thinking - become superfluous, disappear in positive science.

[F. Engels Dialectics of Nature. pp. 524-525. K. Marx and F. Engels. Works. Second edition. State publishing house of political literature, Moscow • 1961, volume 20. 827 p.]

This is perfectly correct and true reasoning, expressed almost 150 years ago, is applicable in modern conditions.

The theory of modern physics (TMP) has departed from nature, from materialism and dialectics of nature to an idealistic distance. Because of this, TMP has ceased to be a science in the full sense of the word. TMP stands today on a false (anti-materialistic) platform. TMP has ceased to be a scientific theory. Esotericism has become the basis of modern physics. The TMP does not pose and does not solve the fundamental question of physics - the fundamental question of the specific representation of matter in nature.

Violent, spiteful anti-materialism is characteristic of the entire modern physical community and the environment adjacent to it. Bourgeois-idealistic philosophy (BIP), false and deeply anti-scientific at its core, the philosophy of anti-materialism is today the philosophical core of the theory of modern physics (TMP), including the theory of relativity (GR). The matter of nature is not represented in an adequate and worthy way in the conceptual apparatus of modern physics. The fundamental question of physics, the question of the specific representation of matter in nature, has not been resolved. The specific manifestation of matter in nature, the specific location of matter in nature are not indicated. The matter of nature is not in the subject area of modern physics. The matter of nature is not displayed adequately in modern physics. The matter of nature is not introduced into the bosom of physics as the main physical quantity. There are some sporadic conversations among physicists about the materiality of nature, about the materiality of objects of nature, but things do not go beyond talk, everything is limited to talks. Modern physics has distanced itself, broken away from material nature to an idealistic height. Modern physics has actually ceased to be a scientific theory. Modern physics has become fundamentally false (because anti-materialistic) and anti-scientific (because false) theory of nature.

This is the main problem with the theory of modern physics (TMP). But this is also the main fault of the entire modern physical party, the authorities, the establishment, the elite, the entire physical community.

But within the framework of TN, among others, the fundamental problem of physics, the problem of a specific representation of matter in nature and its circulation, is solved.

This decision, in general, can be imagined point by point as described below. In the same paragraphs, the solution of the problem of gravitation on a dialectical-materialistic basis will also be presented and set out in parallel.

First, nature is an objective reality that exists outside of our consciousness and independently of our consciousness. Nature exists irrespective of anything or anyone. Nature exists absolutely. And this last statement, the judgment is obviously true and scientific. By the way, the application of Popper's criterion (the principle of the scientific character of a theory) to this single judgment, statement logically leads to the conclusion that this judgment is not scientific. This judgment, according to Popper's criterion, can be scientific only if a real experiment is indicated that could refute the existence of nature. But this is nonsense. And this contradicts the previously established fact of the truth and scientific nature of the proposition "Nature exists absolutely". This contradiction unequivocally testifies only to one thing, that Popper's criterion (the principle of the scientific character of a theory) is false and anti-scientific in its basis. The physical community prays to the wrong god!

Secondly, nature is material and dialectical, nature is simple and economical, nature is knowable.

Thirdly, the materiality of nature means that all the bodies of nature consist in the final analysis (precisely, in the finite, and not infinite!) of minimal material bodies, of elementary particles.

Fourthly, the dialectical nature means that all the material bodies of nature are in motion, change, movement, dynamics, development, evolution.

Fifthly, the largest material object of nature is the Universe.

Sixth, according to the TN, vacuum in nature is a void and material vacuum dust (MVD). Vacuum does not prevent the movement of material

bodies in nature. Vacuum does not shield the material bodies of nature in any way. Vacuum is surrounded by all material bodies of nature. Vacuum does not penetrate into the interior of the minimal material bodies of nature (and these are elementary particles).

Seventh. In nature there is a certain natural material mechanism Singularity. There is also a predominant movement of material vacuum dust (MVD) towards the Singularity. Singularity, using material vacuum dust (MVD) as a raw material, produces, generates, forms material NUM-objects. The abbreviation “NUM” stands for “Natural Unit of Matter”. Immediately after its formation, each material NUM-object receives its own initial impulse from the Singularity. Having received this initial impulse, the material NUM-object begins to move in the surrounding vacuum by inertia evenly and rectilinearly away from the Singularity. The matter of NUM-objects is the only, basic and primary building material for the Universe. The matter of NUM-objects belongs to the Universe and belongs to nature. Vacuum matter in the form of material vacuum dust (MVD) belongs to nature, but does not belong to the Universe. Although the vacuum itself is present in the Universe. Only the matter of NUM-objects belongs to the Universe, is fixed and taken into account in the Universe. The Universe is generated by the Singularity. Singularity is a unique source of matter in nature for the Universe. Whether the Singularity itself is unique in nature, we do not know and will never know.

Eighth. The mechanism of the Singularity operates in a strictly periodic, harmonic regime. In each cycle of this functioning, exactly one material NUM-object is produced, generated and radiated into the surrounding vacuum. The duration (time duration) of one cycle of the Singularity functioning is a strictly constant value. This duration is the minimum fixed time interval in nature, the time quantum. The fixedness of the time interval of the time quantum means that in nature the moment of the end of the time quantum is fixed, which is also the moment of the beginning of the next, immediately following the first, second time quantum. It is at these fixed moments of time of nature (and the Universe) that the

completion (complete completion) of all elementary actions (quanta of actions) in nature are recorded. Generation and emission of a NUM-object in one cycle of the process of functioning of the Singularity is an example of one type of elementary actions (quanta of actions) in nature.

Singularity can be (and this is justified and convenient to a certain extent) imagined as a kind of natural oscillator operating at a given natural frequency. It can also be said that the Singularity itself, as a material oscillator, sets the rhythm and pace of the entire Universe. This will be a more correct, refined and adequate representation. This is the natural (universal) rhythm and pace. This is the rhythm and pace of nature (Universe). One can also imagine the Singularity in the form of a natural “bottleneck”, through which the material vacuum dust (MVD) “leaks”, as it were, being transformed along the way into material NUM-objects. But it is important to understand that the functioning of the Singularity is a strictly periodic, harmonic fundamental process of the nature. The number of material NUM-objects generated and emitted by the Singularity, counted from a well-defined point in time, represents the absolute universal time or the absolute age of the Universe. Universal absolute time is measured by matter, by the amount of matter produced and radiated by the Singularity. In the process of functioning of the Singularity, matter and time are naturally connected. It is an organically inseparable bond, an inseparable unity. Matter is the unique and only substance of nature. Matter is in constant motion. Motion is an attribute (basic property) of matter. And time is a unique and the only form of existence of moving matter. Matter and time are the two main essences of nature. These are organically related entities, essences. In this sense, we can talk about the triune essence of nature: “matter + motion + time”. The organic connection of matter and time in physics should be adequately reflected in the form of the identity of the corresponding physical quantities matter and time. For quantum of matter (EUM) and quantum of time (EUT) this will be the identity: $EUT=EUM$. Three-letter symbols such as EUM, EUT, EUL etc. should be considered as a single symbol within the “Theory of Nature”. For larger units, for natural units of matter (NUM) and time (NUT) this will be the identity: $NUT=NUM$. Of course, matter must first be

introduced into the conceptual apparatus of physics, into the bosom of physics as the basic physical quantity. This fundamental problem is also solved within the framework of the TN.

Ninth. Quantum of matter. Each NUM-object contains one natural unit of matter, NUM. In its further (after generation and radiation) movement and existence, the NUM-object breaks up into a certain number of quantum of matter (EUM). This number is determined by the unique constant of nature (of the Universe): $UCN = 1,210\ 256 \cdot 10^{44}$ ($UCN=1.210\ 256*10^{\{44\}}$). So we have the equality $NUM=UCN\ EUM$. The discovery of a unique constant of nature (and this is the absolute of nature!) is one of the fundamental discoveries of the Theory of Nature. Only the matter of NUM-objects (NUM) or quanta of matter (EUM), their available quantity is taken into account, actually used throughout the Universe, is the fundamental, most important characteristic of the Universe. Vacuum matter in the form of material vacuum dust (MVD) is not taken into account in the Universe in any way.

The quantum of matter is the minimum amount of matter in nature. In quantitative terms, this value is equal to the reciprocal of the unique constant of nature: $\{EUM\} = UCN^{-1} = 8,262\ 718 \cdot 10^{-45}$. By virtue of the identity $EUT=EUM$, there will also be numerical equality with respect to the time quantum: $\{EUT\} = UCN^{-1} = 8,262\ 718 \cdot 10^{-45}$. These are all absolute natural quantities, numerical values derived from the unique constant of nature (the Universe), UCN. Within the framework of the “Theory of Nature”, within the framework of the new physics of TP, the unique constant of nature UCN is also introduced into the bosom of physics as the main physical quantity simultaneously with the matter.

At the same time, the quantum of matter, as a material body, is a dynamic material flesh pulsing in the rhythm and pace of nature. The quantum of matter is not a static material firmament. The quantum of matter in the process of its pulsation reaches the lower and upper limits of pulsation. These are the finite limits. The lower limit of the pulsation is the only one.

In this state (in this hypostasis) a quantum of matter is a grain of matter. A grain of matter is a natural matter's carrier of natural standards of mass, length and time (matter!). These standards in a grain of matter are represented by quantum of mass, quantum of length and quantum of time (quantum of matter!) respectively. The upper limit of the pulsation of a quantum of matter is a state (hypostasis) of a fundamental particle. The upper limit of the pulsation of a quantum of matter can be different, it can be vary. The connection here is this: the diameter of the upper limit of the pulsation of a quantum of matter is the main, primary sign of the type of the fundamental particle (proton, neutron, electron, etc.). Each fundamental particle is generated by an individual quantum of matter. We are talking about a quantum of matter pulsing in the rhythm and pace of nature. On this basis (and as a consequence of this) we can quite justifiably and confidently speak of a fundamental particle pulsating in rhythm and tempo of nature. All quantum of matter, all fundamental particles pulsate synchronously in the same rhythm and pace of nature. This rhythm and pace is set by the Singularity, is set by its strictly periodic, harmonic natural process of functioning.

Tenth. Within the framework of the “Theory of Nature” such a fundamental discovery worthy of the Nobel Prize in physics was made (see Fig. 1). It turns out that all fundamental particles can be placed on one graph. In the reporting, reference system, in the coordinate system $\{d, m\}$, where d is the diameter of an fundamental particle (FP), and m is the mass of the FP, all fundamental particles “have or occupy” their own place on the hyperbola $m \cdot d \equiv UCN^{-1}$. This is the law of nature, discovered within the framework of the “Theory of Nature”.

Eleventh. A grain of matter. The lower limit of quantum of matter pulsation is a grain of matter. In the state (hypostasis) of a “grain of matter”, a pulsating quantum of matter stays for some fixed time. This time duration is less than a quantum of time (EUT), but not equal to 0. The diameter of a grain of matter is a quantum of length (EUL). According to the “Theory of Nature” the size of a grain of matter, including its diameter,

are variable. The diameter of a grain of matter changes with time. Over time, the diameter of grain of matter (aka quantum of length, EUL) increases according to a certain law. This law has been established and opened within the framework of the “Theory of Nature” (TN). This is the fundamental law of our universe, the main law of the evolution of our Universe. This change quantum of length has its own finite limits. There is a starting value and there is a finishing value for the diameter of a grain of matter (quantum of length, EUL). These values correspond to the



Fig. 1. Graph of the arrangement of five elementary particles.

beginning of the evolution of the Universe and its completion. These both values are finite. And the evolution of the Universe itself takes place in time frames from UCN^{-1} NUT to UCN NUT. It should be noted that the absolute universal time or the absolute age of the Universe equal to 1 NUT is, as it were, a temporary “middle” of the evolution of the Universe. At

this time, all the main characteristics of the Universe take their “median” numerical values.

Twelfth. The main characteristics of the Universe. According to the TN, the Universe has a center, and this center is the Singularity. The Singularity is the unique and only source of matter for the entire Universe. The Singularity sets the rhythm and pace of nature and the Universe. Singularity is a kind of natural metronome. Matter produced by the Singularity in the form of material NUM-objects fly away from the Singularity, from the center of the Universe. This means that the Universe is expanding from the center, from the Singularity. It would be correct to say that NUM-objects are the primary building material for the entire Universe. The Singularity “gives birth” to the Universe. The Singularity provides the Universe with the building matter’s blocks (NUM-objects). Singularity can be conditionally considered the material beginning of the absolute universal coordinate system. Of course, as such, there is no absolute coordinate system in the Universe (in nature). But the Singularity fits in all respects under the material origin of the absolute coordinate system. The first main characteristic of the Universe is a unique constant of nature: $UCN = 1,210\ 256 \cdot 10^{44}$. It is also a universal constant of nature. It is this constant that determines the maximum amount of matter in the Universe, achieved at the moment of the completion of the evolution of the Universe. This value is equal to the numeric value $UCN^2\ NUM = UCN^3\ EUM$. It is this constant that determines the total time of the evolution of the Universe. The value of this physical quantity is equal to $UCN\ NUT = UCN^2\ EUT$. The same value determines the minimum amount of matter in nature, forming a quantum of matter. The value of this physical quantity is determined by the expression (equality) $\{EUM\} = UCN^{-1} = 8,262\ 718 \cdot 10^{-45}$. The same value also determines the minimum time fixed in nature (time duration). The duration of quantum of time, as the physical quantity, is equal to value $\{EUT\} = UCN^{-1} = 8,262\ 718 \cdot 10^{-45}$.

In the framework of the “Theory of Nature” (TN), the relationship between the second and the quantum of time (EUT), the second and the natural unit of time (NUT) is established.

Here are the ratios:

$$1 \text{ EUT} = \alpha \cdot \text{UCN}^{-1} \text{ s} = 6,029 \ 596 \cdot 10^{-47} \text{ s},$$

$$1 \text{ s} = 1,658 \ 486 \cdot 10^{46} \text{ EUT},$$

$$1 \text{ NUT} = \alpha \text{ s} = 7,297 \ 353 \cdot 10^{-3} \text{ s},$$

$$1 \text{ s} = \alpha^{-1} \text{ NUT} = 1,370 \ 360 \cdot 10^2 \text{ NUT} = 137,035 \ 999 \text{ NUT}.$$

Wherein:

$$\alpha = 7,297 \ 353 \cdot 10^{-3} - \text{ is the fine structure constant (FSC),}$$

$$1 \text{ EUT} = \text{UCN}^{-1} \text{ NUT} = 8,262 \ 718 \cdot 10^{-45} \text{ NUT},$$

$$1 \text{ NUT} = \text{UCN} \text{ EUT} = 1,210 \ 256 \cdot 10^{44} \text{ EUT}.$$

Another most important fundamental characteristic of the Universe is the current absolute universal time or the current absolute age of the Universe (A, age) in NUT units. It is clear that if the current age of the Universe or the current universal time is A NUT, then the current amount of matter (M) in the Universe is equal to:

$$M = \{A\} \cdot \text{UCN} \text{ NUM} = \{A\} \cdot \text{UCN}^2 \text{ EUM}.$$

The inverse relationship will be:

$$A = \frac{\{M\}}{\text{UCN}} \text{ NUT} - \text{ universal time in NUT}, \quad (1)$$

or

$$A = \{M\} \text{ EUT} - \text{ universal time in EUT (time quantum)}. \quad (1')$$

Another most important fundamental characteristic of the Universe is the current value of the diameter of a grain of matter (quantum of length,

EUL). According to the scientific research of “Theory of Nature”, the dependence of the quantum of length (EUL) on time, on the absolute universal time or on the absolute age of the Universe (A in NUT) is expressed by the formula:

$$\uparrow \{EUL(A)\} = \{A\}^{0,125} \cdot UCN^{-0,875}. \quad (2)$$

This is a value that increases over time, which is indicated by an up arrow in front of the formula.

If the value A (the age of the Universe) changes within limits:

$$UCN^{-1} \leq A \leq UCN,$$

then the quantum of length (the diameter of a grain of matter, EUL) changes (increases) within limits:

$$UCN^{-1} \leq \{EUL\} \leq UCN^{-0,75}.$$

Do not forget that the most important fundamental, primary characteristics of the Universe are also quantum of matter (EUM) and quantum of time (EUT). Their numerical absolute values are:

$$\{EUM\} = UCN^{-1} = 8,262\,718 \cdot 10^{-45},$$

$$\{EUT\} = UCN^{-1} = 8,262\,718 \cdot 10^{-45}.$$

In this case, the identity of the physical quantities of the quantum of matter and the quantum of time takes place, or simply the defining formula of the quantum of time:

$$EUT \equiv EUM.$$

Here, perhaps, are all the primary main characteristics of the Universe.

Thirteenth. But there are also derivative fundamental characteristics of the Universe. These are the quantum of mass (MAM, the mass of a grain of matter), the maximum speed in nature (MVN), the gravitational value (quantity) of the Universe (GVU).

The defining formulas for these quantities, according to the “Theory of Nature” are:

$$\left\{ \begin{array}{l} \text{MAM} \equiv \frac{\text{EUM}}{\text{EUL}} \equiv \frac{\text{EUT}}{\text{EUL}} \\ \text{MVN} \equiv \frac{\text{EUL}}{\text{EUT}} \\ \text{GVU} \equiv \frac{\text{EUL}^3}{\text{MAM} \cdot \text{EUT}^2} \equiv \frac{\text{EUL}^4}{\text{EUT}^3} \end{array} \right. \quad (3)$$

Taking into account the formula (2), we can write the following system of equalities:

$$\left\{ \begin{array}{l} \uparrow \{\text{EUL(A)}\} = \{A\}^{0,125} \cdot \text{UCN}^{-0,875} \\ \downarrow \{\text{MAM(A)}\} = \{A\}^{-0,125} \cdot \text{UCN}^{-0,125} \\ \uparrow \{\text{MVN(A)}\} = \{A\}^{0,125} \cdot \text{UCN}^{0,125} \\ \uparrow \{\text{GVU(A)}\} = \sqrt{\frac{\{A\}}{\text{UCN}}} \equiv \{A\}^{0,5} \cdot \text{UCN}^{-0,5} \\ \text{UCN}^{-1} \leq \{A\} \leq \text{UCN} \end{array} \right. \quad (4)$$

The values of these quantities are presented in the absolute natural system of units $\{\text{EUL}, \text{MAM}, \text{EUT (EUM)}\}$. The intervals of change of physical quantities presented (indicated) in the system (4) can be represented as a system (4'):

$$\left\{ \begin{array}{l} \text{UCN}^{-1} \leq \{\text{EUL}\} \leq \text{UCN}^{-0,75} \\ \text{UCN}^{-0,25} \leq \{\text{MAM}\} \leq 1 = \text{UCN}^0 \\ 1 \leq \text{MVN} \leq \text{UCN}^{0,25} \\ \text{UCN}^{-1} \leq \text{GVU} \leq 1 = \text{UCN}^0 \\ \text{UCN}^{-1} \leq A \leq \text{UCN} \end{array} \right. \quad (4')$$

The arrows in front of the formulas in the system (4) indicate the nature of the change in the corresponding physical quantity, an increase in the value is marked with an up arrow, a decrease in a value is marked with a down arrow. This change in numerical value occurs throughout the evolution of the Universe.

The system of equalities and conditions (4), taking into account equality (1), can be represented as:

$$\left\{ \begin{array}{l} \uparrow \{EUL(M)\} = \{M\}^{0,125} \cdot UCN^{-1} \\ \downarrow \{MAM(M)\} = \{M\}^{-0,125} \\ \uparrow \{MVN(M)\} = \{M\}^{0,125} \\ \uparrow \{GVU(M)\} = \{M\}^{0,5} \cdot UCN^{-1} \\ 1 \leq \{M\} \leq UCN^2 \end{array} \right. . \quad (5)$$

In these formulas, M means the value (physical quantity) of the current amount of matter in the Universe in NUM units, and {M} denotes the numerical value of the quantity M, according to the theory of dimensions and metrology.

Consider the fourth formula from system (5):

$$\uparrow \{GVU(M)\} = \{M\}^{0,5} \cdot UCN^{-1}. \quad (6)$$

It can be represented in a modified form as follows:

$$\{M\} = (UCN \cdot \{GVU(M)\})^2. \quad (6')$$

Formula (6) allows us to determine the fundamental value of the gravitational value of the Universe (GVU), knowing the current amount of matter (M) in the Universe.

Formulas (6) and (6') show a direct relationship between the numerical values of the physical quantities of the gravitational value (quantity) of the Universe (GVU) and the current amount of matter (in NUM units) in the entire Universe. Here it is the original natural material physical meaning of the gravitational value of the Universe (GVU). The gravitational value (quantity) of the Universe (GVU) is a function of the current amount of matter in the Universe and the unique constant of nature UCN.

Since the available amount of matter in the Universe (M) is an increasing quantity, and UCN is a constant, the gravitational value (quantity) of the Universe (GVU), according to formula (6), is an increasing physical quantity. Without going into details (they are presented in the TN book), it

should be noted that the numerical value of this physical quantity for the current age of the Universe is equal to the numerical value in SI of Newton's gravitational constant ($G = 6,67408 \cdot 10^{-11} \frac{\text{m}^3}{\text{kg} \cdot \text{s}^2}$). It is this circumstance that allows using formula (6') to determine the current available amount of matter M (in NUM units) for the current age of the Universe. And the age of the modern Universe itself in units of NUT is determined by formula (1). This gives the following value for the present age of the universe and the current absolute universal time (A) in NUT:

$$A = 5,391\,238 \cdot 10^{23} \text{ NUT.} \quad (7)$$

Translated into our usual units, this gives the following:

$$A = 3,934\,177 \cdot 10^{21} \text{ s} = 124,666\,537\,596 \cdot 10^{12} \text{ years.} \quad (7')$$

This is 124 trillion 666 billion 537 million 596 thousand years. This is the modern age of the Universe, according to the calculations of the “Theory of Nature”.

The total time of the evolution of the Universe will be:

$$\text{UCN NUT} = 1,210\,255\,564\,34 \cdot 10^{44} \text{ NUT, or}$$

$$\text{UCN NUT} = \alpha \cdot \text{UCN s} = 8,831\,661\,551\,93 \cdot 10^{41} \text{ s, or}$$

$$\text{UCN NUT} = 2,798\,584\,668\,01 \cdot 10^{34} \text{ years.}$$

It's about $2,8 \cdot 10^{34}$ years.

The current age of the Universe calculated within the framework of the TP does not at all coincide with the age of the Universe determined (calculated) by modern astrophysicists, which is known to be approximately 13.8 billion years.

Here is the relevant information from the Russian version of Wikipedia:

«Age of Universe - the time elapsed since the beginning of the expansion of the Universe.

According to modern concepts, according to the Λ CDM model, the age of the Universe is 13.799 ± 0.021 billion years”.

[https://ru.wikipedia.org/wiki/Age_of_Universe]

The English version of Wikipedia gives the following range for the current age of the universe:

“...13.772±0.020 billion years as interpreted with the Lambda-CDM concordance model as of 2018...”

[https://en.wikipedia.org/wiki/Age_of_the_universe]

Fourteenth. The physical meaning of the gravitational quantity of the Universe (GVU) was revealed above, it is clearly presented in formula (6), which we will now slightly modify:

$$\uparrow \{GVU(M)\} = \{M\}^{0,5} \cdot UCN^{-1} = \frac{\sqrt{\{M\}}}{UCN} = \sqrt{\frac{\{M\}}{UCN^2}}. \quad (6A)$$

In this formula, M is a physical quantity. In this formula, M represents the current available amount of matter in the Universe in NUM units. The gravitational value (quantity) of the Universe (GVU) is a function of the current amount of matter in the Universe and the unique constant of nature UCN. Now let's be more precise.

The value of UCN^2 denotes the maximum possible amount of matter in the Universe produced by the Singularity. This is the amount of matter at the moment of completion of the evolution of the Universe. And the value M is the current amount of matter for the considered absolute age of the

Universe. Both quantities are represented in the NUM unit. Thus, the physical meaning of the physical quantity the gravitational value (quantity) of the Universe (GVU) is the square root of the ratio of the available amount of matter at the considered moment of absolute universal time to the maximum amount of matter in the Universe. And this value varies within limits:

$$UCN^{-1} \leq GVU \leq 1.$$

Consider now also the defining formula of the physical quantity gravitational value (quantity) of the Universe (GVU), presented in the system (3), this is the third formula:

$$GVU \equiv \frac{EUL^3}{MAM \cdot EUT^2} \equiv \frac{EUL^4}{EUT^3}.$$

Let's make the following equivalent transformations, taking into account the identity (EUT = EUM):

$$GVU \equiv \frac{EUL^4}{EUT^3} \equiv \frac{EUL^4}{EUM} \cdot \frac{1}{EUT^2}. \quad (6B)$$

The physical quantity $\frac{EUL^4}{EUM}$ is the reciprocal of the physical quantity $\frac{EUM}{EUL^4}$, and the latter physical quantity is the density of the quantum of matter placed in a four-dimensional cube with an edge equal to the quantum of length (EUL).

The divided by time is the corresponding speed, and divided by the square of time is the corresponding acceleration.

So the formula (6B) expresses (and defines) such a physical essence of the physical quantity - the gravitational value (quantity) of the Universe: GVU

is the acceleration of the change in the physical quantity of the reciprocal density of the quantum of matter placed in a four-dimensional cube with an edge equal to the quantum of length (EUL), per quantum of time (EUT) at the considered current time. This is great.

The fifteenth. It is also possible from the fourth equality of system (4):

$$\uparrow \{GVU(A)\} = \{A\}^{0,5} \cdot UCN^{-0,5}$$

derive the corresponding formula for the gravitational quantity of the Universe (GVU), similar to formula (6'):

$$\{A\} = UCN \cdot (\{GVU(M)\})^2.$$

These formulas show a direct relationship (dependence) between the numerical values of the physical quantities of the gravitational value (quantity) of the Universe (GVU) and the absolute universal time or the absolute age of the Universe (A) in units of NUT. In the same formulas, there is also a unique constant of nature UCN.

It should also be noted (without going into details that are presented in the book on TN) the fact that the numerical value of the physical quantity maximum velocity in nature (MVN) for the current age of the Universe is equal to the numerical value of the physical quantity speed of light in vacuum in SI ($c = 299\,792\,458 \frac{m}{s}$).

Sixteenth. Let us graphically represent the changes in four physical quantities of the length quantum (EUL, the diameter of a grain of matter), the mass quantum (MAM, the mass of a grain of matter), the maximum

speed in nature (MVN), the gravitational value (quantity) of the Universe (GVU) from the system of equalities (4). These four graphs are presented together in figure 2 (Fig. 2). The main graph, of course, is the graph of the change in the physical quantity quantum of length (EUL, it is also the diameter of a grain of matter). The remaining graphs are a consequence of the main graph. This applies to changes in the quantum of mass (MAM), changes in the physical quantities of the maximum velocity in nature (MVN) and the gravitational value (quantity) of the Universe (GVU).

Graphs are presented in a rectangular coordinate system. But the coordinate axes are presented on a logarithmic scale. Behind the numerical value on the coordinate axes, for example equal to x, stands and implies a

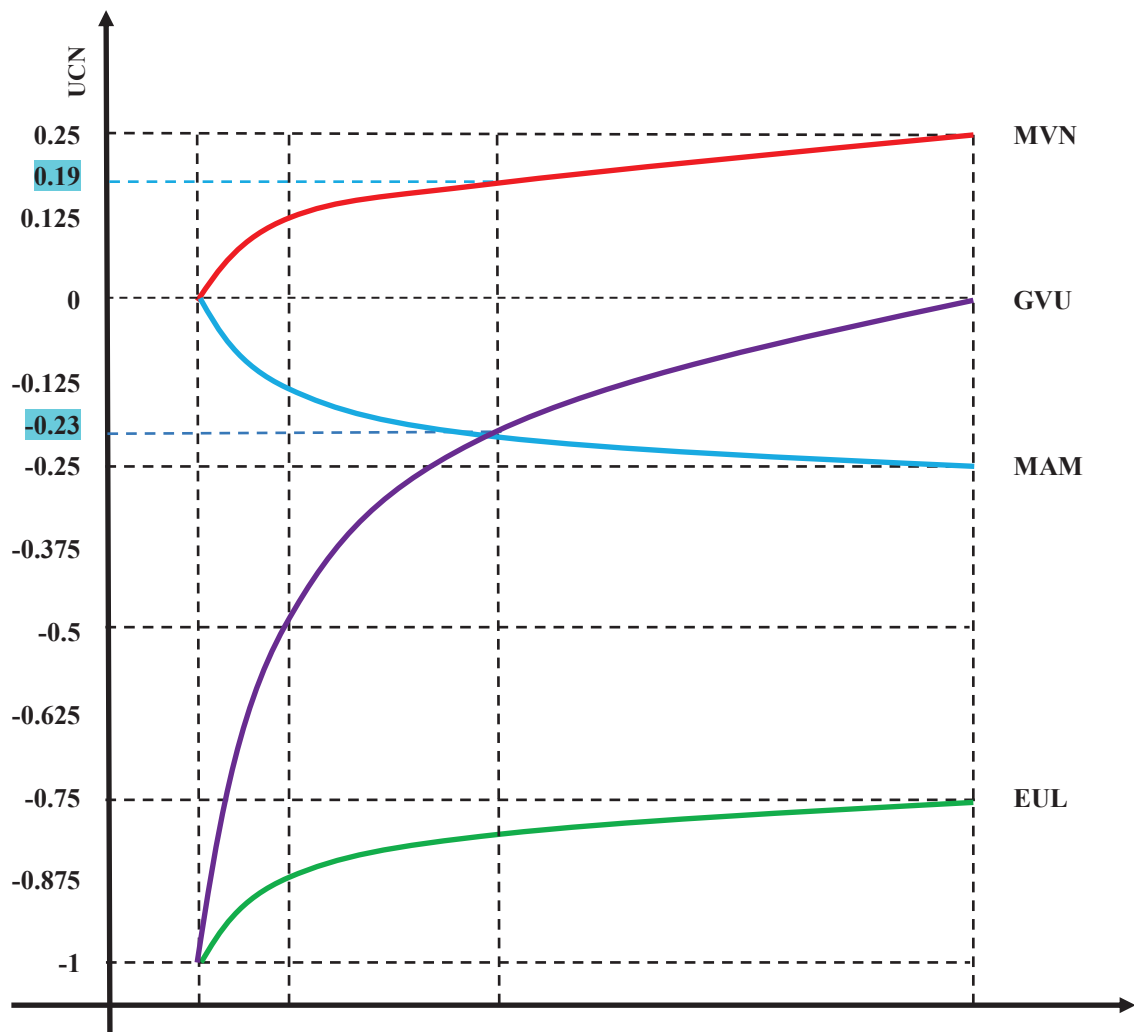


Fig. 2. Graphs of the most important characteristics of the Universe.

value equal to the numerical value UCN^x . This must be kept in mind. The horizontal axis represents the time axis. In this case, the value -1 corresponds to a value equal to $UCN^{-1} NUT$ or the completion of the first quantum of time of the evolution of the Universe. The value 0 on the time axis corresponds to the universal time equal to $UCN^0 NUT = 1 NUT$, this is the completion of the first natural unit of time in the evolution of the Universe. This moment is a kind of “middle” of the evolution of the Universe, as discussed above. The value 1 on the time axis corresponds to the universal time equal to $UCN NUT$, this is the moment of the completion of the evolution of the Universe.

As for the graph of the change in the physical quantity of the gravitational value (quantity) of the Universe (GVU), then the graph (Fig. 2) clearly shows that this change occurs within limits:

$$UCN^{-1} \leq GVU \leq 1,$$

as indicated in system (4').

An analogue for the physical quantity gravitational value (quantity) of the Universe (GVU) from the “Theory of Nature” is the physical quantity Newton's gravitational constant (G). For the modern epoch of the Universe, for the modern absolute age of the Universe, the numerical values of these physical quantities are equal. In this case, the numerical value of the physical quantity Newton's gravitational constant is taken in SI: $G = 6,67408 \cdot 10^{-11} \frac{m^3}{kg \cdot s^2}$.

Seventeenth. This event (completion of the evolution of the Universe) does not significantly affect the work, the functioning of the Singularity. The singularity functions forever, and the evolution (evolution time) of the Universe is finite. The Singularity does not stop its functioning “not for a

second"! Singularity (natural mechanism) continues its normal functioning, but it will already be functioning to produce matter for the construction of a new universe. The evolution of the old Universe is complete. The evolution of a new young universe begins. No inheritance from the old Universe, which has completed evolution, is transferred to the new universe, which begins evolution. Everything that was connected with the Universe, which completed its evolution, will sink into the abyss, is lost forever, disappears without a trace, vanishes into ruin, is not saved anywhere. No information about the history of the Universe that has completed its evolution is stored anywhere and in any form, it is lost irrevocably, without a trace. The evolution of the new universe starts from zero, "from scratch". The only thing required after the evolution of the old Universe is completed is some initial adjustment of the parameters of the Singularity. This concerns, first of all, such a moment as setting (indicating) the initial value and the final value for changing the diameter of a grain of matter, that is, the length quantum (EUL). This concerns the lower limit of matter quantum pulsation (EUM) and the direction of its change (evolution).

Eighteenth. But all the matter of the previous Universe, which completed its evolution, which was represented by quanta of matter pulsing in the rhythm and pace of nature, does not disappear, does not disappear without a trace, does not "evaporate", it turns into "frozen" (not pulsating) grains of matter or (more specifically) into vacuum matter, into material vacuum dust (MVD). This material vacuum dust (MVD) begins its movement towards the Singularity. Here it is the complete circulation of matter in nature. This is a closed cycle. This natural circulation of matter in nature can be represented as the following simple scheme:

"(1) Material Vacuum Dust (MVD) moving towards the Singularity --> (2) Singularity --> (3) material NUM-objects moving by inertia uniformly and rectilinearly away from the Singularity --> (4) pulsing in rhythm and the pace of nature quanta of matter, continuing to move away from the Singularity --> (5) completion of the evolution of the universe --> (6)

grains of matter, frozen in its limiting state (static, not pulsating), forming material vacuum dust (MVD) -- > (7) MVD moving towards the Singularity”.

The matter of the Universe, which has completed its evolution, does not belong to the new universe, it turns into material vacuum dust (MVD). This is the frozen limiting final state of a grain of matter.

Nineteenth. Immediately after the completion of the evolution of one Universe, without any breaks and stops, the evolution of a new universe begins. In the process of functioning of the mechanism of the Singularity, nature puts updated initial settings related to the initial, current and limiting (final) values of the quantum of length, EUL (diameter of a grain of matter) and the direction of this change . This is represented in the first line of the system (4’):

$$UCN^{-1} \leq \{EUL\} \leq UCN^{-0,75}.$$

More precisely, the initial settings of the Singularity include an algorithm for changing the diameter of a grain of matter, also known as a quantum of length (EUL), and this is presented in the first line of the system (4):

$$\uparrow \{EUL(A)\} = \{A\}^{0,125} \cdot UCN^{-0,875}.$$

It is quite possible that some other formula could also be used, such as this:

$$\downarrow \{EUL(A)\} = \{A\}^{-0,125} \cdot UCN^{-0,75}.$$

In this formula, the quantum of length will be a decreasing quantity. The quantum of length (EUL) will constantly decrease over time. In this case, the limits for changing the quantum of length (EUL) will be different, as follows:

$$UCN^{-0,875} \leq \{EUL\} \leq UCN^{-0,625}.$$

This will be the second scenario for the evolution of the universe. It is quite admissible and it is considered in detail in the book “Theory of

Nature|. The author is of the opinion that in the modern evolution of the Universe, the first scenario of evolution is realized, given by systems (4) or (5).

Twentieth. Careful consideration and “reading” of systems (4), (5) leads us to other conclusions.

From the first relation (equality) of system (4), and this is the following expression:

$$\uparrow \{EUL(A)\} = \{A\}^{0,125} \cdot UCN^{-0,875},$$

it follows that the current absolute age of the Universe or the current absolute universal time (A in NUT) is calculated by the formula:

$$A = UCN^7 \cdot EUL^8.$$

This expression, equality shows an unambiguous relationship, the relationship between the physical quantities of the current absolute universal time (or the current absolute age of the Universe, designation A in unit NUT) and the length quantum (EUL, this is the current diameter of a grain of matter). Knowing the current numerical value of the physical quantity quantum length (EUL), we can easily and simply calculate the current absolute universal time (A in units of NUT) and vice versa. But we do not have instruments and practical methods for carrying out such a measurement. This is not available to us.

Similar ratios that determine the current absolute universal time or the current absolute available amount of matter (in NUM units) can be derived from all four equalities of the system (4). And from system (5) we can derive similar ratios for the current available amount of matter (M) in the Universe, while the unit of account will be the natural unit of matter (NUM).

Here are the corresponding relations (equalities) for system (4):

$$\left\{ \begin{array}{l} \{A\} = \text{UCN}^7 \cdot \text{EUL}^8 \\ \{A\} = \text{UCN}^{-1} \cdot \text{MAM}^{-8} \\ \{A\} = \text{UCN}^{-1} \cdot \text{MVN}^8 \\ \{A\} = \text{UCN} \cdot \text{GVU}^2 \end{array} \right. \quad (8)$$

In these formulas (8), the expression $\{A\}$ means the numerical value of the physical quantity A (the current absolute universal time) in NUT units .

And here are the corresponding relations (equalities) for system (5):

$$\left\{ \begin{array}{l} \{M\} = \text{UCN}^8 \cdot \text{EUL}^8 \\ \{M\} = \text{MAM}^{-8} \\ \{M\} = \text{MVN}^8 \\ \{M\} = \text{UCN}^2 \cdot \text{GVU}^2 \end{array} \right. \quad (9)$$

In these formulas (9), the expression $\{M\}$ means the numerical value of the physical quantity M (the current absolute amount of matter in the Universe produced by the Singularity) in NUM units.

As for the physical quantities quantum of length (EUL, diameter of a grain of matter) and quantum of mass (MAM, mass of a grain of matter), they are not available for our measurement.

But as for the physical quantities, the maximum velocity in nature (MVN) and the gravitational value (quantity) of the Universe (GVU), then the situation is somewhat (dramatically!) different.

Within the framework of the TN, the thesis is substantiated that for the modern epoch of the Universe (for the modern age of the Universe) the numerical value of the physical quantity maximum velocity in nature (MVN) in absolute units ($\frac{\text{EUL}}{\text{EUT}}$) is equal to the numerical value in SI of the physical quantity the speed of light in vacuum ($c = 299\,792\,458 \frac{\text{m}}{\text{s}}$). The situation is similar for the physical quantity the gravitational quantity of the Universe (GVU). Namely, the numerical value of the physical quantity gravitational value (quantity) of the Universe (GVU) in absolute units

$\left(\frac{\text{EUL}^3}{\text{MAM} \cdot \text{EUT}^2}\right)$ is equal to the numerical value in SI of the physical quantity Newton's gravitational constant ($G = 6,67408 \cdot 10^{-11} \frac{\text{m}^3}{\text{kg} \cdot \text{s}^2}$).

But modern experimental scientific technology allows us to calculate with a sufficient degree of accuracy both fundamental physical quantities and the speed of light in vacuum (c) and Newton's gravitational constant (G) in the SI system. Knowing the numerical values of these quantities, we, according to the corresponding formulas

$$\begin{cases} \{A\} = \text{UCN}^{-1} \cdot \text{MVN}^8 = \text{UCN}^{-1} \cdot \{c\}^8 \\ \{A\} = \text{UCN} \cdot \text{GVU}^2 = \text{UCN} \cdot \{G\}^2 \end{cases} \quad (8')$$

$$\begin{cases} \{M\} = \text{MVN}^8 = \{c\}^8 \\ \{M\} = \text{UCN}^2 \cdot \text{GVU}^2 = \text{UCN}^2 \cdot \{G\}^2 \end{cases} \quad (9')$$

we can determine both the current absolute universal time (or the current absolute age of the Universe) A in NUT units , and the current amount of matter M (in NUM units) produced by the Singularity and located at the current (considered) moment of time in the Universe.

In the case of system (8'), simple calculations give the following results for the current age of the Universe in NUT units :

$$\begin{cases} \{A\} = 8,262718 \cdot 10^{-45} \cdot \{299\,792\,458\}^8 = 5,391238 \cdot 10^{23} \\ \{A\} = 1,210256 \cdot 10^{44} \cdot \{6,67408 \cdot 10^{-11}\}^2 = 5,391238 \cdot 10^{23} \end{cases} \quad (8'')$$

All this is in full agreement with the calculations of the current age of the Universe presented earlier in this article (see formulas (7) and (7')).

Twenty first. The above picture of the universe, the picture of the evolution of the Universe is completely devoid of such a concept as “ether”. According to the “Theory of Nature” there is no ether in nature. There is a vacuum, like a couple: emptiness and material vacuum dust (MVD). And there is a predominant movement of the MVD towards the Singularity. Ether has no place in this real picture of the world. There is no

ether in nature. This is one of the most important fundamental conclusions of the “Theory of Nature”.

Twenty second. In the above picture of the world, the foundations of the universe, in the picture of the evolution of the Universe, there is no place for any space of nature, as such, as some kind of natural material structure. And this is a reflection of our reality, where in reality there is no space as a natural entity. Nature does not need space at all. The requirements imposed on nature by the conditions of the existence of space are such that they are beyond the power of nature itself, they are not feasible by nature itself. The space of nature, as such, as a kind of natural essence, a kind of receptacle for everything and everyone in nature does not exist. This is also the fundamental conclusion of the “Theory of Nature”.

Adherents (adepts) of the existence of the space of nature have not brought and do not give any real evidence of the existence of the space of nature, space as a natural entity. What place does space occupy between nature and the Universe? Adepts, adherents of the idea of the existence of the space of nature cannot answer this most important question. There is not a single weighty argument for the existence of the space of nature. There is talk about the metric, about the dimension of space. But none of the adherents, adherents of the existence of the space of nature, has given any justified, more or less convincing and significant arguments about how the metric is generated by space and where in nature (in the Universe) is the primary link, primary zone containing information about the dimension of space. There are standard lengthy arguments of the adherents of the existence of space about how beautiful, elegant, axiomatic Euclid's space is and that nature, the Universe simply cannot exist and manage without it. Space brings a metric to measure distances in nature (in the Universe). But where the standard of this metric is in space, in nature, adherents, adherents, admirers of the existence of the space of nature do not lead at all. Speculations on the idea of space also take place in the theory of relativity (GR). Adherents of GR idea (“GR-man) have been brandishing the idea of a four-dimensional space-time for more than a century. But

they have not been able to provide real evidence of its real existence over the past 100 years. “GR-man” people simply believe in their fixed idea about the existence of a united and single space-time in nature. But they do not give and do not provide us and themselves with proof of the existence of a united and single space-time. And without real proof of the existence of real space-time, and in addition the existence of an inextricable connection (the connection between time and space), this whole idea is pure fiction, there is just a big lie from the modern party of physicists, there is unnecessary, useless fuss, there is just bullshit. This is the truth! This is the naked truth. Here is the ugly truth! And we do not need any of your excuses, imposing, suspicious gentlemen of the “GR-men”. You sit “waders” in your swamp of lies and are mired in it. There you have a place. This is your latrine. Sit down, continue to sit, praise your swamp, chew the gum of lies, continue to blather and verbiage in defense of your esoteric space-time, and we will move on without you. You and I are not on the same path, “GR-man” gentlemen. We don't need you at all. We will follow the path of truth, the acquisition of true knowledge, the path of science, along with the only true and scientific philosophy of dialectical materialism, together with the only true and scientific dialectical materialistic worldview and understanding of world.

Twenty third. But within the framework of the “Theory of Nature” the question of the standard of length has been resolved positively. This is a quantum of length, this is the diameter of a grain of matter. The very grain of matter is a natural material carrier of natural reference values of length, mass, time, matter. At the same time, the quantum of matter (EUM) is the content of a grain of matter, the quantum of length (EUL) is the diameter of a grain of matter, the quantum of mass (MAM) is the mass of a grain of matter, the quantum of time (EUT) is a quantity that is homogeneous and identically equal to the quantum of matter ($EUT = EUM$). That's all. The metric in the Universe (in nature) is set simply and naturally, as the diameter of a particle of matter, as a quantum of length (EUL).

Twenty-fourth. Again and again we turn to the concept of “grain of matter”. This is the lower limit of quantum of matter pulsation. A grain of matter is a material reference carrier of natural elementary units of matter (quantum of matter, EUM), length (quantum of length EUL, it is the diameter of a grain of matter), mass (quantum of mass MAM, it is also the mass of a grain of matter), time (quantum of time EUT, this the quantity is homogeneous and identical to the quantum of matter EUM. The identity **EUT = EUM** is the defining identity for the physical quantity quantum of time. But as we already know (see systems (3), (4), (5)) with the participation (through) these quantities, such fundamental characteristics of the Universe, such fundamental physical quantities as the maximum velocity in nature (MVN) and the gravitational value (quantity) of the Universe (GVU). And the physical quantities quantum of matter (EUM), quantum of time (EUT), quantum of length (EUL) are themselves fundamental characteristics of the Universe. It is clear that each quantum of matter, each fundamental particle, through a grain of matter, carries in itself (on itself) all this information. Each quantum of matter, each fundamental particle, by means of a grain of matter, “possesses” this information about all the fundamental characteristics of the Universe. But this is not just a static possession of information at the level of every grain of matter, every quantum of matter, every fundamental particle. This is actionable information. This is information for action, for actual application and use at the level of the quantum of matter. The quantum of length is used for the external displacement of the quantum of matter. This outward displacement per quantum of length (EUL) takes place per quantum of time (EUT). Hence, the speed of this movement is the maximum speed (velocity) in nature (MVN). This means that all matter quanta, all fundamental particles move with the same speed - with the maximum speed (velocity) in nature (MVN). And the analogue of this velocity (MVN) in the theory of modern physics (TMP) is the speed of light in vacuum ($c = 299\,792\,458 \frac{\text{m}}{\text{s}}$).

Within or more precisely, in the “disposition” of each quantum of matter, and therefore each grain of matter, each fundamental particle, there is

information about the current absolute age of the Universe or (which is the same) about the current absolute universal time (A) in units of NUT. Universal time is invisible, but actually present in every quantum of matter pulsating in the rhythm and pace of nature, in every fundamental particle, in every moment of existence fixed in nature (quantum of matter, a grain of matter, fundamental particle), in every quantum of time. This is a single universal natural time. The unified universal absolute time flows uniformly and is counted by constant quanta of time (EUT) or natural units of time (NUT). There is no acceleration or deceleration of the course of time in nature (as predicted by “GR-men” and GR theory) in reality, in our objective reality.

Twenty fifth. Infinity and eternity. This article would be incomplete if a few words about the categories “infinite” and “eternal” are not said. Nature is an objective reality that exists outside of our consciousness and independently of our consciousness. Nature exists absolutely. And this is a true and scientific position, a judgment, a conclusion. Nature is eternal. There is a Singularity in nature. This is a natural material object, a mechanism that works non-stop, that is, forever. But it is a local and finite (not infinite) object. The mechanism of the Singularity, the Singularity itself is the primary source of matter for the Universe. This mechanism converts the material vacuum dust (MVD) into the matter of the Universe, which is the material NUM-objects (natural unit of matter, NUT) and quanta of matter. Nature keeps records of the matter that has entered the Universe from the Singularity, the available matter in the Universe (M), in natural units of matter (NUM). The available amount of matter (M) in the Universe in NUM units is an increasing value, which during the evolution of the Universe changes within:

$$1 \leq \{M\} \leq UCN^2.$$

In this case, $\{M\}$ means the numerical value of the available amount of matter in the Universe M in NUM units at the considered moment of time.

At the same time, vacuum matter in the form of material vacuum dust (MVD) is not included in this account. The matter of the Universe is a part

of the matter of nature. The Universe is the largest material object of nature. But this is not an object of nature infinite in extent and not eternal in time. The Universe is finite in the time of its existence, its evolution. The center of the Universe, the central region of the Universe, is the Singularity. The Universe is expanding from the center, from the Singularity. Vacuum is emptiness and material vacuum dust (MVD).

The functioning of the Singularity is a strictly periodic, harmonic process of nature (in nature). This is the unique and only source of matter entering the Universe. In each cycle of the harmonic process of functioning of the Singularity, one natural unit of matter (NUM) is formed, generated and radiated away from the Singularity into the surrounding vacuum in the form of material NUM-objects. In its further movement and existence, each NUM-object breaks up into UCN matter quanta. And an elementary particle (proton, neutron, electron, etc.) is formed from a quantum of matter.

The duration of one cycle of the process of functioning of the Singularity is one quantum of time (EUT). And the UCN of successive quanta of time forms a natural unit of time (NUT) of nature:

$$\text{NUT} = \text{UCN EUT}.$$

Singularity sets the rhythm and pace of nature (the Universe). In essence, the Singularity is a natural material oscillator. The Singularity is a natural metronome. Singularity is a natural clockwork. The time of the Universe, the universal time is measured by the amount of matter produced and emitted by the Singularity. This determines the close organic one-to-one relationship in nature between moving matter and time. Since the quantity of matter is absolute, the universal time is also absolute. Within the framework of the evolution of the Universe, the universal time and the time of nature coincide. The process of evolution of the Universe is limited in time. This means that absolute universal time is limited. Absolute universal time shows the absolute age of the Universe. These are homogeneous identical quantities. We will denote these quantities by the

symbol A in NUT units. The time of evolution of the Universe is limited by:

$$UCN^{-1} \leq \{A\} \leq UCN.$$

In this case, $\{A\}$ means the numerical value of the considered current absolute universal time (or the current age of the Universe) A in NUT units.

Also, there is a simple connection between the matter that arrived and is in the Universe (M) and the universal time (A):

$$\{A\} = \frac{\{M\}}{UCN} = \{M\} \cdot UCN^{-1} \text{ or}$$

$$\{M\} = \{A\} \cdot UCN.$$

Time, absolute universal time is measured by matter, the amount of matter. Matter is the unique and only substance in nature. Matter and time are essences of nature.

The evolutionary time of the Universe is finite, not infinite. The NUM-objects emitted by the Singularity move with the maximum velocity (speed) in nature (MVN) for the moment of radiation. This is finite, not infinite speed. This means that the dimensions of the Universe, its diameter will be finite throughout the evolution, not infinite. There is no infinity and eternity in the Universe. There is no infinite space either, since space itself does not exist in nature. There is no space in nature, as such, as some kind of natural entity. Nature “cannot afford” the content of infinite space. And nature does not need a finite space, it is superfluous. Space in nature does not carry any real load. Space does not perform any significant natural function in nature. It is quite enough for Nature that there is a Singularity, vacuum, the movement of material vacuum dust (MVD) to the Singularity, the mechanism of the Singularity processing material vacuum dust (MVD) into the matter of the Universe (natural unit of matter, NUM) and transferring the initial impulse to NUM-objects, and there is the Universe, as the largest material object in nature, the “building material” for which are quanta of matter (EUM), formed as a result of the decay of

NUM-objects after their emission by the Singularity. Quanta of matter in the process of their pulsation periodically generate all elementary particles. The movement of NUM-objects and quanta of matter, the pulsation of quanta of matter is carried out in an environment of vacuum. Space for the movement of NUM-objects, quanta of matter (EUM) and all material bodies is absolutely not needed. This movement takes place in a vacuum, in a vacuum environment. The metric characteristic of motion (length) in the form of a quantum of length (EUL) is the most important characteristic of the material body of a grain of matter. So, nature absolutely does not need space as a carrier of a metric (a unit of length). Such characteristic of space as its dimension is absolutely inapplicable and in no way applicable to the movement of all material bodies of nature. Singularity fully plays the role of the absolute beginning of the Universe, the starting point for the Universe, it is the center of the Universe. And such a function of space as the capacity of all material bodies of nature is not required. During the evolution of the Universe, all bodies belong to the Universe. But the vacuum, although it permeates the entire Universe, but its material component in the form of material vacuum dust (MVD) of the Universe does not belong, but belongs to nature. And vacuum does not need space for its existence. The existence of a vacuum is a self-existence in nature. The existence of NUM-objects and quanta of matter (EUM) is also self-existence in the Universe, surrounded by vacuum, in nature. Here, too, no space of nature is required. So let's state a fact: there is no space, as such, as some kind of natural structure or essence, as some kind of receptacle for everything and everything in nature does not exist. This is the most important conclusion of the "Theory of Nature".

There is no infinity and eternity in nature and the Universe.

With one exception concerning the category and concept of "eternity"! This is the absolute existence of Nature. It is absolute existence in the nature of the Singularity. This is absolute existence in the nature of vacuum. This is the absolute non-stop movement of material vacuum dust (MVD) to the Singularity. This is the non-stop functioning of the mechanism of the Singularity. This is a constant periodic process of

changing the evolution (existence) of one universe to the evolution (existence) of another universe. This is the cycle of matter in nature according to the scheme: vacuum matter (MVD) --> Singularity --> Universe matter (NUM, EUM) --> vacuum matter (MVD). In this case and in this sense, one can also speak of an endless (cyclic) circulation of matter in nature.

Twenty sixth. The following point should be noted.

Gravitational interaction of two material bodies A and B with masses m_A and m_B is respectively described by the formula:

$$F = G \cdot \frac{m_A \cdot m_B}{r^2} \text{ or}$$

$$F = GVU \cdot \frac{m_A \cdot m_B}{r^2}.$$

Wherein:

$$m_A = \sum_{i=1}^n a_i$$

is the mass of the body A as the sum of the masses a_i of all its fundamental particles,

$$m_B = \sum_{j=1}^m b_j$$

is the mass of the body B as the sum of the masses b_j of all its fundamental particles.

Then the equality takes place:

$$m_A \cdot m_B = \sum_{i=1}^n a_i \cdot \sum_{j=1}^m b_j = \sum_{i=1}^n \sum_{j=1}^m (a_i \cdot b_j)$$

We assume that the distance between fundamental particles a_i and b_j is equal to r_{ij} , then the force of gravitational interaction between bodies A and B can be expressed by the formula:

$$F = G \cdot \sum_{i=1}^n \sum_{j=1}^m \left(\frac{a_i \cdot b_j}{r_{ij}^2} \right)$$

or

$$F = GVU \cdot \sum_{i=1}^n \sum_{j=1}^m \left(\frac{a_i \cdot b_j}{r_{ij}^2} \right)$$

The author in his “Theory of Nature” simply states that between all material bodies, in particular between all fundamental particles, there is a force of gravitational attraction.

But how does this force of attraction arise and be generated by material bodies, by material bodies, fundamental particles, is still not clear to me, as the author of the “Theory of Nature”! This remains to be seen.

Also, it is not clear to me how the force of static electrical attraction and repulsion arises and is generated. This question also remains open within the “Theory of Nature”.

Twenty seventh. The party of modern physicists today and throughout the last century has been an important, significant combat detachment of the forces of modern reaction and obscurantism. This is the bitter truth. This must be acknowledged. This is evidenced by the state of affairs in the theory of modern physics (TMP), including the theory of relativity (GR). TMP today is a false and anti-scientific bourgeois-idealistic theory, which aims to study nature. But nature is material and dialectical. This is a fact, this is a reality. But the party of modern physicists actually, in essence, does not recognize this very reality. There is truth among some modern physicists, some formal, forced, tortured, in words, recognition of the materiality of nature. But this is a meaningless confession, it is pure “blah-blah-blah”, it is a red herring, this confession does not go beyond words, it

does not extend to the requirement of the actual recognition of the content of fundamental particles as “pure”, concrete matter of nature. This verbal recognition does not entail the most important requirement to introduce matter of nature into the bosom of physics as the main physical quantity. This verbal confession is worthless! It does not entail any drastic measures regarding the foundations of physics. The whole party of physics remains on idealist, anti-materialist positions. And because of this, the theory of modern physics (TMP) remains a false and anti-scientific theory, which aims to study nature, but from a false and anti-scientific bourgeois-idealistic position, from the position of a false and anti-scientific bourgeois-idealistic worldview and understanding of the world, deeply anti-materialistic in its basis. The fact that modern physics today is a false and anti-scientific bourgeois-idealistic theory is the main misfortune of modern physics. But at the same time, this is a great fault of the entire party of physicists before all of humanity, before all of us.

On the other hand, for a long time now there has been, there is a “Theory of Nature” - a new dialectical-materialistic physics and cosmogony (cosmology). The first working version of “Theory of Nature” (TN) in articles was ready in 2014. Articles on TN were sent to hundreds and thousands of addresses of various physical organizations, editorial offices of physical journals. In 2021, the book “Theory of Nature” was published. But the party of modern physicists does not react in any way to this revolutionary phenomenon - the emergence of the “Theory of Nature”. The modern physical school is in a deep crisis in all directions. This is a deep, fundamental, systemic crisis. The party of modern physicists for 10 years now has been demonstrating its characteristic deep disregard for the “Theory of Nature”. But the “Theory of Nature” is a revolution in physics and cosmogony (cosmology). All this is no accident. This indicates a deep disintegration in the ranks of modern physicists. This indicates a deep penetration into all modern physical structures in the leading positions of the forces of reaction and obscurantism. Here, for the past 10 years, the party of physicists has been showing its complete scientific inconsistency, insanity and impotence using the example of attitudes towards TP. This is our reality. The conclusion is simple and clear: the party of modern

physicists today and already for a century has been the vanguard of the forces of modern reaction and obscurantism. Unfortunately. But this is a fact. We accept it. And we must take this into account. We have a full revelry of the forces of reaction and obscurantism in the vastness of modern physics. In relation to the “Theory of Nature” over the past 10 years, the party of modern physicists has shown itself to be a party of asshole physicists. This is also a fact.

There is an old Russian saying about two permanent troubles in Russia. Today it should be clarified as follows: “There are three troubles in Russia: roads, fools and the modern party of physicists!”

Reference

1. Engels F. Dialectics of nature. K. Marx and F. Engels. pp. 343-756. Works. Second edition. State Publishing House of Political Literature, Moscow • 1961, volume 20. 827 p.
2. Lenin V. I. Materialism and empirio-criticism. PSS. Fifth edition. Publishing House of Political Literature, Moscow • 1968. Volume 18. 525 p.
3. Rutkevich M. N. Dialectical materialism. Course of lectures for philosophy. Faculties. M., “Thought”, 1973. 527 p.
4. Philosophical Dictionary. Paul ed. M. M. Rosenthal. Edition 3rd. M., Politizdat, 1972. 496 p.
5. Yusupov R. A. Theory of Nature (physics of nature, revolution in physics, critical notes on modern physics) : monograph / R. A. Yusupov. - Vladivostok : Publishing House of the Far Eastern Federal University, 2021. - 328 p. ISBN 978-5-7444-4973-5. DOI <https://doi.org/10.24866/7444-4973-5>, <https://vixra.org/pdf/2207.0105v1.pdf>,
6. http://vixra.org/author/robert_yusupov - my articles on TN on the site ViXrA archive,
7. <https://proza.ru/avtor/yusrob> - my articles on TN on the site Proza.

PS Your_manuscript RC10126 “My understanding of the phenomenon of gravity” by Robert Yusupov

and your_manuscript RC10127 “Alternative to SI” by Robert Yusupov

Dear Dr. Yusupov,

Thank you for sending the above articles to be considered for publication in Reviews of Modern Physics. We have now discussed this among the RMP Editorial Board and are sorry to report that your papers are not suitable for RMP.

We would like to thank you for your interest in our journal and hope that you will find a different publication venue.

Yours sincerely,

Randall D. Kamien (he/him/his)

Lead Editor

Reviews of Modern Physics