

The Connection of Time with the Physical Vacuum. Description of the Physical Processes Originating from the Movement of Time. Part 2.

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Analysis of the relationship between matter and physical vacuum.

The mathematical similarity of electromagnetism, classical and quantum physics, indicates the existence of general laws in physics. The existence of constants, indicates the subordination of matter to the unified processes in Nature. There is a paradox of the presence of unity, in the absence of recognition of unity. To solve the paradox, we apply Noether's theorem. In the reverse interpretation of Noether's theorem, the constancy is ensured by the presence of the variable [1]. In other words: "The combined system is stable if it contains a variable component". The stability is dual.

Stability of rest is provided by inertia (completeness) or vice versa - by emptiness. The space has stability of rest. The physical processes occurring in space, because of the multitude and multidirectionality, can not create the constancy of the existing physical Space. If the space itself is dynamic, then it has elasticity and we will create buildings and territory, "inflating" the space with the desired material. Consequently, the constancy of Space is realized by its immobility. The immobility of Space makes it a scene for natural processes and does not allow us to take space for a factor that creates mathematically analogous laws of nature and physical constants.

The stability of motion is created by a continuous change in the characteristics of the system or its position relative to the reference point. Stability of motion is the movement of time. Movement over time extends to all existing physical processes. The movement of time can be a factor that creates stability for space and processes in it. Stability of the processes ensures the existence of constants. Proceeding from the continuity of the movement of time and the constancy of physical space, we will continue to analyze the equation of the connection between matter and the physical vacuum.

$$E_0 = \frac{3V_0 M_0 C^2}{4k^3 \pi t_0^3} = \frac{V_0 M_0 C^2}{k^3 T_0}$$

As in the first part of the version, in order to simplify the description of the equation, we derive constant values from it, transforming it into the relation $E_0 T_0 = M_0 V_0$. In the equation and the relationship, the components are the physical phenomena of nature: mass (M), energy (E), time (T) and volume (V). The components are real, so let's call them the Phenomena of Nature.

The change, relative to the initial state, will be called the defect of the Phenomena of Nature. In a dynamic nature, the right-hand and the left-hand side of the relationship $E_0 T_0 = M_0 V_0$ interact, creating a change (defect) in the magnitude of the Phenomena of Nature. The resulting defect creates a new characteristic.

The Defect of the Phenomenon of Nature must be registered directly or indirectly. In its properties, the defect should be similar to the Phenomenon of Nature and not be it. The defect must be continuous in time. Continuity in time is achieved by dynamics (the absence of a state of rest). Dynamics creates an external impact or internal causes. The defect is characterized by:

- the sum of dual defects is zero;

- the defect can not exceed the magnitude of the Phenomenon of Nature. This requirement limits the effect created by defects in the Phenomena of Nature.

To analyze the effect of defects of Nature Phenomena on the properties of matter, we take energy, as the basic parameter of the equation.

Defects of the Phenomena of Nature will be denoted as: mass - dM , volume - dV , energy - dE , time - dT .

The physical vacuum and ether are almost uniform in the universe. Exceptions are inclusions of stars and planets. Matter has many properties. When describing matter with the formula MV , the volume and shape of the bodies depends on many factors. To eliminate the influence of external factors, let us take as V_0 the volume of matter that is practically constant under the existing conditions. These requirements are met by the elementary particles of the atoms of the body. Formula M_0V_0 describes matter without taking into account magnetic, electrical properties and temperature. There is no physical duality in the equation. In this case, an elementary particle of matter must be a particle that does not have physical duality, i.e. electrical and magnetic properties. The neutron particle satisfies these conditions.

Define the physical meaning of defects in the phenomena of nature.

1. Change in the energy of the material system with a defect in the volume of the system.

$$DE_v = \frac{M_0(V_0 \pm dV)}{T_0} \quad (1)$$

Any deformation of the material system is a deformation of its molecules, atoms in the molecule and further electrons of the atom and the nucleus. Deformation of the atom creates a change in the electrical interaction within the atom. Consequently, the defect in the volume of the material system characterizes the interaction of charged particles and electric fields inside matter, and relation (1) describes the change in energy from a volume defect: compression, expansion, chemical reactions, shape change, interaction of charged particles and systems.

If the formula $M_0(V_0 \pm dV)$ describes the interaction of charged particles and electric fields, then it must describe the charged particles themselves. Consequently, there is a defect in the volume of matter in the form of an elementary electric charge. Its mathematical form is $\pm MdV$.

The wide value of the relation (1) is possible in mathematics, but it requires concreteness in physics. The description of one formula of charges, their interaction and change in body volume, is possible with the existence in nature of min of two kinds of defects of the volume of matter. The first defect must be natural / standard. The magnitude of this defect is one in nature and is related to processes in the universe. The second kind is the change in the natural volume defect under the action of local, relative to the universe, causes and is observed in local conditions. A local defect in the volume of matter creates a change only in matter exposed. Taking into account local effects, the relation (1) becomes:

$$dE_v = \frac{M_0(V_0 \pm dV \pm \Delta V \pm dV_1)}{T_0} \quad (2)$$

dE_v is a defect (change) in the energy of matter created by a defect in the volume of matter.

dV - Natural defect in the volume of matter. The electric field of matter;

ΔV , is the defect of the volume of matter arising during the decay / synthesis of matter;

dV_1 - influence of external influences and electric fields.

$\pm M_0dV$ is a particle with a natural volume defect

Inside the brackets there is additivity of defects. For $dE_v = const$, additivity will create the following processes in matter:

- the decay of matter is accompanied by the formation of charged particles / systems;
- electrical phenomena in earthquakes are a consequence of changes in the volume of compressed matter in the earth's crust;
- movement changes the volume of the body. The change in volume is partially compensated by the acquisition of an electric charge by the body. If the body is dielectric or isolated, then it accumulates static electricity;
- for counteraction or in the impossibility of the emergence of a charge of static electricity, the motion of the medium acquires a turbulent character;
- Rapid condensation, moving water vapor, creates conditions for thunderstorms;
- Alloys that increase the overall compactness of the original components, increase the chemical passivity of each component;
- the piezoelectric effect is the compensation of the resulting volume defect, the separation of charged particles in the system;
- alternating electric current, creating a volume defect in the conductor, creates sound vibrations;
- The pressure and the effect of the electric field change the rate of evaporation and chemical reactions [2].

For $dEv \neq 0$, the above processes are weaker, due to the compensation of the volume defect, the change in the energy of matter.

Matter, without a resting volume, is an analog of mass. The absence of a resting volume is observed in waves and flows. A charged particle that has the ability to flow and wave properties is an elementary electron particle. Consequently, the formula MdV describes elementary charged particles.

2 Change in the energy of the system with a defect in the mass of matter.

$$DE_m = \frac{V_0(M_0 \pm dM \pm \Delta M \pm dM_1)}{T_0} \quad (3)$$

dE_m - is the change in the energy of matter in the case of a defect in the mass of matter,

$\pm dM$ - is the field created by the natural defect of the mass of matter;

$\pm dM_1$ - the effect of external fields created by a defect in the mass of matter;

ΔM - mass defect, formed during the decay / synthesis of matter.

$\pm V_0 dM$ is an elementary particle with a natural defect in the mass of matter.

The mass defect must be continuous in time. Mass is a discrete system. Consequently, the field created by the defect of the mass of matter is a field closed to itself. In the listed defects, the physical meaning is understandable only in ΔM : fission, chemical reactions, nuclear decay / synthesis reactions. All these processes have a short span of existence.

A continuous defect in the mass of matter is achieved by two options: the acceleration of matter and continuously changing the mass of matter. The continuous change in the mass of matter will end with the zeroing of the mass or the appearance of a huge mass. This option is a dead end. Movement with linear acceleration requires a continuous arrival / release of energy - the option is unrealistic. Remains a variant of the motion of matter with acceleration, without changing the energy of matter - the motion of matter with centripetal acceleration. In the matter itself, the duration of the circulation of mass is limited in time. Constant mass circulation is possible outside matter. Continuous circulation of mass,

recorded as a lack of rest mass. What should be the shape of the circulating mass of matter? The spherical form of mass circulation does not allow creating a duality of mass defects. Circulation of a defect in the mass of matter makes it possible to create a figure torus, with two poles, in the form of an input-output of a defect of mass from matter.

For elementary circulation, elementary particles must exist. According to equation (3), these particles have a specific volume. But a specific volume with a specific mass is a material particle. Consequently, the mass defect is created by particles that do not have a rest mass and have a volume. The particles must have the form of a torus. In the torus, rotation inside and around the circle is possible. Rotation along the circumference, allows you to observe the effect of the rotating field. The rotation inside creates the duality "input-output", recorded as poles. The vortex flow through the poles can not be broken into two oppositely moving parts. The ruptured torus collapses or forms smaller tori, i.e. There is no possibility of dividing the opposite poles of the field. This description corresponds to properties of the magnetic field. Of the elementary particles known in nature, the neutrinos mathematically represented by the formula $\pm V_0 dM$ satisfy the conditions described. Consequently, a neutrino is a torus without a rest mass. The opposite directions of rotation of the mass defect along the diameter of the torus, relative to the poles, create signs for neutrinos.

Matter, with zero rest mass, is an analog of form. If the form is circulating, the magnetic field changes the surrounding physical space. The change in space affects the behavior of moving particles that have received properties from a change in physical space - particles possessing a charge. This explains the reason for the deviation of moving charged particles in a magnetic field.

At $dE_m = const$, the additivity of the mass defects in Eq. (3) will cause a counteraction reaction in the form of the formation of magnetic fields or neutrino radiation, in the processes of separation / synthesis in matter.

For $dE_m \neq 0$, the additivity of defects in the mass of matter will be weakened by the presence of a defect in the energy of matter.

The equality of the effect, from the motion of the mass defect and the motion of the matter itself, creates a change in the magnetic field, when the magnet moves.

3. Change in the energy of the material system with a defect in the tempo of time in the system.

$$dE_t = - \frac{M_0 V_0 (T_0 \pm dT)}{T_0^2} \quad (4)$$

dE_t is the change in the energy of the material system with a time defect "now" in the system. dT is the natural rate of time;

d, T_1 - influence of external defects of the tempo of time;

$M_0 V_0 dT$ is an elementary particle of matter that has a time defect.

We divide equation (4) into two parts. For $dT_1 = 0$ we obtain

$$-dE_t = \frac{M_0 V_0}{T_0} \times \frac{(T_0 \pm dT)}{T_0} \quad (5)$$

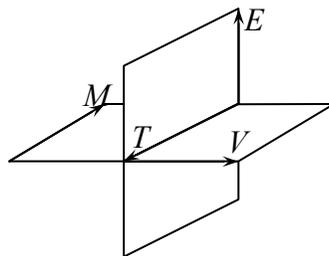
$1 / T_0$ is the natural rate of time. The quantity $1 / T_0$ characterizes the duration of the "now" time period. The word "Period" means the duration of the event. According to the previous logic (we are considering a version that must have a certain logic), the continuously existing standard time period is a particle of time. Particles in Nature are many. Nature exists in the moment "now", i.e. in one particle. Where are the remaining particles of time? The measured amount of time (the duration of the event) consists of the sum of the set of periods $1 / T_0$. Consequently, the particles of the moment "now" create

the past. Before the past and the moment "now" is the future. Consequently, the past is formed from the future for a period of $1/T_0$ or $1/T_0$ is the period of transformation of the future into the past. For the emergence of a new moment "now" it is necessary from somewhere to take a particle of time. It can only be taken from TE air. Consequently, the ether, gives away part of its present time, to the formation of a new moment "now". The actual time of the ether will be called the time potential of the ether or simply the potential of time. Ether, having given a particle of time dT , acquires an excess of energy dE . Consequently, the transformation of the ether creates a radiation of energy in the surrounding space. Transformation is necessary for transformation. In equation (5), the transformer is matter. Consequently, matter, transforms the ether during "now" and further into the past, with the release of energy. Conclusion. Ether is our future, more precisely the substance that provides the future for Nature.

Matter and Time Unity.

Where does the "now" time in which we live come from? Continuous time "now" can only be taken from the Ether. The moment "now" exists continuously, because the Ether the universe is continuously transformed. Continuous transformation creates the effect of time movement. What transforms the ether during the "now" and energy? From equation (5) it follows: the larger the value $M0V0$, the more energy is released during the time motion. The quantity $M0V0$ indicates the amount of matter. Consequently, matter, transforming the Ether, creates time "now". In the Universe, without matter, time "now" does not arise.

But where does "now" disappear? If "now" is preserved and accumulated in the past, then this process will lead to the strengthening of the influence of the past on the future, by forces of mutual attraction. In the history of Nature, the direct influence of the past on the future (destiny) is not objectively fixed. Therefore, "now" is not preserved and does not accumulate. If "now" is not preserved and does not accumulate, then what is it transformed into? To answer this question, consider the figure.



The intersection of planes shown in the figure has the property of "losing" one axis of planes, combining two vectors in one. One axis becomes double. Each axis has a specific physical and informational value. The combination of the two axes creates a loss of information and a distortion of the understanding of the processes taking place in Nature. Which two axes are united? Of the known phenomena of Nature, only time is not recorded (the hours record the moment or duration, and not the time itself). Consequently, the graphically "vanished" axis is time. With what axis did the time "dovetail"? There is no energy with the axis, since TE is one plane. Consequently, the time axis coincided with the axis of mass or the axis of the volume of matter. Matter moves in time, having a different amount of energy. Consequently, the vector of mass of matter coincides with the time vector. The combined axes can coincide in direction or be opposite. If the vectors are aligned in the direction, the movement in time will create one direction of the process of changing the mass and time (PIC). For one direction, time and mass should disappear somewhere, or from something to appear. This option in Nature is not real. Additionally, the PIC system is unstable. Another option: the time axis and the axis of mass are directed counter to each other. The opposite direction of the axes can be described as:

$$M=f(-T) \quad (6)$$

This variant shows an increase in the mass of matter in the universe, the transformation of the Potential of Time Ether into a mass of matter. From the point of view of the presented graphics, the ether is our future, matter is our past. In such a situation, time exists only in the moment "now" - the moment between the past and the future. A lot of "now" create the duration of an event or the interval between events. Time and its movement outside the "now" is not. Outside the "now", time exists as a component of the Ether in the form of the potential of the Time of Ether or in the form of a mass of matter. Consequently, there are two kinds of time in Nature. The first kind is the Ether component - the potential of Time. The second kind is the "now" moment. The transformation of the ether into energy, and the time "now", violates the equilibrium $MV = ET$, therefore, this equilibrium is true for the moment "now".

The fulfillment of relation (6) is possible if the interrelation of the Phenomena of Nature is represented by the following equation $M = iV = -iE = -T$, which confirms the existence of complexity in Nature.

The transformation of the Ether into matter is accompanied by the release of electromagnetic energy. What happens with electromagnetic radiation? Electromagnetic radiation absorbed by matter, interacts with each other. These processes lead to loss of energy, electromagnetic radiation, and the formation of radiation with an infinite period of oscillation. What is EMR with an infinite period of oscillation? The answer is the analog of relation (6.) The relation (6) has an analog for the volume-energy pair. The analogue is the equation $V = f(-E)$, i.e. electromagnetic energy is transformed into a volume or the universe expands, transforming EMP into space.

Why does time motion have a mathematical form $1 / T$? Motion is the change of coordinates in the accepted frame of reference. Changing coordinates by subtraction and addition can create a complete disappearance of the Phenomena of Nature or their transition to a minus content. The disappearance of even one Phenomenon of Nature will lead to irreversible consequences. Three phenomena of Nature will create unity in the form of a triangle. The triangle is a rigid figure and all processes in Nature will stop. If a transition through zero is possible, other difficulties arise. The transition to a minus state is a transition to another axis. Such a transition disrupts the process of interaction and transformation of the Phenomena of Nature with each other. The universe is dynamic and stable because of the impossibility of achieving the values of zero and infinity by the Phenomena of Nature. With a different mathematical form of the process, Nature does not arise.

Transforming the ether, the material bodies create an ether discharge between them. Under the influence of rarefaction, the bodies are attracted, and the effect of gravitation arises. Consequently, the gravitational field is due to the movement of time.

The presence of gravitational attraction reduces the intensity of the conversion of the ether into energy. This fact indicates the dependence of the gravitational constant on the natural time defect.

The transformation of the ether is similar to the process of absorption of the ether by matter, which will create a rotational moment in matter. Energy, to generate a torque, is proportional to the energy released by matter, i.e. obeys the dependence $E = f(M^2)$. The energy of rotation of the material point is proportional to the square of the angular velocity. Equal dependencies, released and absorbed energy, will create the effect of a linear increase in the angular velocity, in the layers of planets / stars, when approaching the center. The increase in angular velocity, from the surface to the center, creates shear stresses, in solid layers and rotation of the liquid core. The shear stresses, in the solid layers of the planet, will create conditions for the displacement of the layers relative to each other. The displacement of the layers manifests itself as the drift of continents or earthquakes. Met data that the core of the Earth rotates faster than its surface layers [3].

The radiation of energy by matter, from the transformation of the Ether into matter, creates an opposing process in matter. The counteraction is the absorption of energy by matter. Absorption of energy, in its essence, is a transformation of energy. The transformation of energy was realized in two

directions: "the transformation of photon energy - the change of photons, not transforming their energy." "Changing photons without transforming their energy" was realized as the ability of matter to reflect photons - transformation in direction. "Transformation of photon energy" was realized in the ability of matter to transform the energy of photons into another kind of energy.

Checking. The movement of mirrors should change their reflectivity.

Evolutionary development of the ability to emit photons has led to an increase in the radiation potential. The radiation potential decayed qualitatively and quantitatively. The quantitative decay created the intensity of the radiation. Qualitative decay created the spectrum. Further, the intensity and width of the spectrum increased. Consequently, the relic radiation must be weak in intensity and "compressed" in the spectrum, even with the "redshift" taken into account.

Time in terms of mathematics.

Time is usually considered to be the interval between events. This concept of time is an abstract value. The abstraction allows you to navigate between the events, which creates a certain comfort in people's lives. This time definition allows you to move in time and select a reference point. Changing the reference point and the ability to move through time is widely used in practice.

Taking time for reality, we must explain what the reality of time is and how it is expressed. For abstract time, it is possible to move the moment "now" in time. This possibility is not fixed. Therefore, real time differs from the abstract. What is the real time?

For an explanation, let's start from the zero point. Everything exists in the moment "now". The past was in the moment "now". The future will be. Time moves and can change the size of the moment "now".

How can you move while being in the moment "now"? Only if the moment "now" is moving.

Movement is the change of coordinates. The change in coordinates, on the axis of the past, is carried out abstractly and is not fixed objectively. Note that the transformation changes the ratio. The ratio for a substance is concentration. Consequently, the change in coordinates (the movement from the future into the past) is a change in the concentration of the potential of Time, the transformation of the Ether into matter and energy. Conclusion. The actual duration of the event is the total period of the transformation of the ether by matter. The very period of transformation is defined as the "moment" now. "Now" is no longer an Ether, with the properties of the Ether and not matter, with the properties of matter. This medium allows us to jointly present in the moment "now" the past (matter), the future (ether) and all the Phenomena of Nature.

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Influence of defects of Matter on the transformation of the Ether.

The decay of a neutron into a neutrino, a proton and an electron alters the nature of the interaction of matter with the ether. The disintegration into dual particles will create duality in the behavior of elementary particles, when moving in time. Duality will be expressed by the appearance of the reverse process - the transformation of the time "now" and energy into ether. The appearance of the reverse process will change the standard rate of transformation of the ether into energy and mass.

1. Neutrinos are equal in magnitude and opposite in direction of rotation. This creates a zero balance in the change in the rate of ether transformation. Consequently, neutrinos do not affect the change in the rate of ether transformation.

2. Charged particles have a significant difference in mass. The Compton effect shows that an electron lowers the energy of photons. Let's assume that the electron transforms the energy and time "now" into the air. The proton transforms the ether into energy and time "now". Quantitatively (more volume and mass), the proton destroys the ether more than the electron of the ether creates. As a result, there is an excess of energy release by the atom. Continuous replenishment of the electron energy from the proton or atomic nucleus allows the electron to maintain its velocity on the orbitals and creates an electron stability in the atom. The more electrons in an atom, the more effective the reverse process is and the atom releases less energy from a time defect. This effect explains the effect of the composition of stars on the intensity of their release of energy. Massive stars of low luminosity - "Red Giants" contain in their composition a little hydrogen and their specific energy release is lower, the specific energy of star radiation, with a lot of light chemical elements.

Checking. Gravitation affects the rate of time. Electrons must increase the value of the gravitational constant.

3. The presence in Nature of several defects of a single phenomenon of Nature, creates a mutual dependence of the constituent parts of equation (5). Gravitation slows down the natural rate of time. The slowing down of the tempo of time leads to a decrease in the release of energy by the material system, which can be represented in a dual way:

- decrease in the natural tempo of time, with $MV = \text{const}$;

- a change in the product of MV , for $1/T = \text{const} = 1/T_0$

In reality, both processes occur. Matter changes the pace of time. The movement of time changes the magnitude of the product MV of matter.

-Processes in nature, when the product MV changes, change basically the volume of matter. The defect of the volume of matter is aimed at reducing the influence of the time defect on the system.

Consequently, the density of matter depends on the utilization rate of the natural time defect in the system. In the nucleus of an atom, the density of matter is determined by the natural defect of time. In an atom, the effect of a time defect is weakened by electrons. In molecules, the process of weakening the influence of a time defect is more effective than in atoms. Therefore, the chemical compounds have a density lower than the average density of the constituent atoms.

-4. Change in the energy of the system for defects in mass and volume.

$$dE_{mv} = \frac{dMdV}{T_0}$$

The ratio describes the electromagnetic field.

dE_{mv} is the energy of the electromagnetic field.

When $dE_{mv} = const$, the change in any of the numerator factors causes a change in the second. The change in the magnetic component leads to an opposite change in the electric field. The change in the electric field creates an inverse change in the energy and shape of the magnetic field. By this principle, an electrical transformer, an inductor, operates.

5. Change in energy, with defects in mass, volume and time in the system. In matter, three defects arise in the decay / synthesis of material systems and in the motion of matter.

$$DE_{mv} = \frac{(M \pm dM \pm \Delta M \pm d_1 M_1)(V \pm \Delta V \pm dV \pm d_1 V_1)(T \pm dT \pm d_1 T_1)}{T_0^2} \quad (7)$$

dE_{mv} is the change in the energy of the system for defects in mass, volume, and time in the system. Equality of the effect from the motion of defects in matter and the motion of matter, allows to take into account the effect in total.

dM is the defect of the mass of matter arising from the motion of matter and the presence of a magnetic field in matter.

dV - the defect of the volume of matter arising from the presence of a charge and / or the motion of matter.

dT is the defect in the rate of time of matter, in the presence of kinetic energy in matter.

Δ - defect from the processes of separation / synthesis of matter.

d_1 - influence of external fields.

The mutual influence of defects creates conditions under which the change of any defect will cause a response in the remaining defects. The reaction is aimed at reducing the change in the first defect. Counteracting the appearance of defects, matter changes shape, electrical and magnetic properties, reacts by changing speed or temperature.

a) In matter moving, in the absence of decay ($\Delta = 0$), the product $MV = const$.

In this embodiment, the energy of the moving system is proportional to the time defect dT . Movement is characterized by speed (kinetic energy) and temperature (thermal energy), relative to the natural tempo of the time of the universe. This explains the mutual transformation of velocity into body temperature. What are the differences between temperature and body speed? Speed is an indicator of the kinetic energy of the body. The temperature is associated with electromagnetic radiation, i.e. temperature is a quantum component in the total time defect of matter. Electromagnetic radiation occurs during the transition of an electron from a high to a low orbital. Consequently, the temperature of the body is the kinetic energy of electrons in the atom - the energy of rotation of electrons in atoms. Rotation does not have a vector. The absence of a vector served as the basis for the view that temperature is the chaotic motion of molecules. The dependence of temperature, on the change in the tempo of time, shows that the absolute zero of temperature is limited by the natural rate of time. The tempo of time is influenced by processes that slow the course of time. Consequently, the greater the mass and velocity of the planet, the higher the absolute zero temperature on it.

Gravity counteracts the movement of time. We can say that dT is directed towards gravity, i.e. The intensity of the radiation of energy by the stars affects the gravitational constant. Speed slows the movement of time, i.e. at the speed of light, the system does not radiate energy and the photons do not radiate energy. Therefore, photons passing by are not visible, i.e. The space is full of light and does not shine.

b) The phenomenon of Nature, with the maximum value of a defect, exists only as a defect. In this state, matter has no rest mass and the change in the tempo of time is stopped. These properties are possessed by photons. Consequently, the photon energy describes the relation

$$E_{mvt} = \frac{-dMdvdT}{T_0^2} = \frac{-dMdv}{T_0} \times \frac{dT}{T_0} = hv \quad (8)$$

h - Planck's const.

ν is the photon emission frequency.

l / T_0 is the size / standard of time.

The energy of a photon is specified by the conditions when it arises. These conditions are the frequency of the radiation. The radiation frequency is given by the characteristic $dMdv$ of the photon.

Consequently, dT / T_0 describes the Planck constant. At the moment "now" $TE = const$, Time and Energy are connected as inverse quantities or $E = const / T = const \times h$.

Consequently, the energy of the physical vacuum is equal to the product of the unknown const by the Planck constant. Let us take the value of the Ether time potential equal to the standard time interval - 1 second. Considering that all Nature Phenomena are voluminous, Planck's constant is a volume defect in the ether time potential. In this case, the energy of the physical vacuum (ether in space) is $6 / \pi h = 2.88 \times 1033 \text{ j} / m^3$, which is equivalent to the matter density of $3.2 \times 1016 \text{ kg} / m^3$. Such a density of energy in a physical vacuum allows matter to move in a physical vacuum with little or no resistance (the more energy the system has, the more transparent or more penetrating it becomes when interacting with other systems).

c) The change in the speed of motion of matter creates a change in the ratio of matter and its defects dM / M_0 , dV / V_0 . Relation (8) describes quantum physics. When the matter moves at a speed much lower than the speed of light, the magnitude of natural defects relative to matter is small and the relation (7) describes classical physics. At velocities close to the speed of light, in matter the classical and quantum components of matter are commensurable. This situation describes the relativistic motion. The influence of the specific defect size is registered by modern physics as the separation of physics into quantum physics for $dM = M_0$, $dV = V_0$, $dT = T_0$, relativistic $dV < V_0$, $dM < M_0$, $dT < T_0$,, and classical $dV \ll V_0$, $dM \ll M_0$, $dT \ll T_0$..

d) Calculate the linear value of the Planck constant.

G_h is the linear quantity of the Planck constant.

$$G_h = \sqrt[3]{\frac{3h}{4\pi}} = 1,08 * 10^{11}.$$

Mathematically, G_h describes the radius of a circle of a sphere of volume h . Multiply G_h by 2π , we get the diameter of the sphere and the number equal to the gravitational constant with a deviation of 2%. It follows that the quantum of electromagnetic energy in its motion rotates, forming a tunnel with a circle numerically equal to the gravitational constant. The spiral (tunneling) motion of electromagnetic radiation creates conditions for the transfer of the energy quantum in a concentrated form, regardless of the distance to the object. Such a motion makes it possible to record photons from a distant radiation source, which explains the photometric paradox.

It has been experimentally proved that the photons rotate in their motion, forming a tunnel through their rotation. The radius of rotation of photons in the publication is not indicated [4].

e) При $\Delta V \Delta M \neq 0$

The disintegration of systems creates a defect in mass and volume in the parts of the system. Taking into account the natural course of time, there are three defects in matter: the acquisition of velocity, the change in temperature, the emission of an electromagnetic pulse. And vice versa.

g) $dE = MVdT / T^2 = hv$. $MVh / T = hv$. From $M / T = const$, the volume is similar to the frequency.

Under pressure, the volume of matter decreases. Consequently, under pressure, at the same temperature, the matter emits electromagnetic energy of a higher frequency.

The presence of the constant h indicates the existence of a transmission limit for energy by a physical vacuum. The limit on the transmission speed is the speed of light. The limit on the number of photons, creates a requirement to increase the frequency (concentration of energy) radiation.

Interaction of space and time.

The moment "now" is a point in space, i.e. time is in Space. If we accept or create conditions when time in Space is stopped, then the speed limit of Space, relative to the "now" point, is realized as the speed at which the movement (transformation) of time is stopped. This speed is the speed of light (m/sec). The limit is valid for this moment "now", i.e. The recorded speed of light will be constant at any moment "now". The speed limit, in the form of the speed of light, creates the Doppler effect - there is no possibility to change the speed - we change the frequency.

Space is a point on the arrow of time, i.e. The space, with the filling, is in the moment "now". The limit of the speed of time in space is reached. When Space is compressed into a point. As a consequence, the change of time in "point = Space", almost simultaneously, for the entire physical Space. Such speed of time movement in physical space, creates synchronization of time "now" in all physical space. At this speed, to register the ethereal wind, it is technically impossible. The synchronization of time in physical space creates the same magnitude of the Planck constant, depending on the amount of matter, in the entire Universe. Looking ahead, I will say that the supernova explosion creates a new matter from the Ether. Consequently, during the explosion of supernovae, oscillations of the Planck constant must be recorded. The point in Nature has specific dimensions. The magnitude of the moment "now", relative to the "arrow," is small. The calculations forgotten by me showed that for 103 seconds, a change in time will occur in the entire existing universe. From $TE = MV$, when Space reaches a minimum size, the process direction is "tilted". In mathematics. the point of "tipping over" is called the inflection point.

Space and Time are three-dimensional. The three-dimensionality of time is due to the mutual presence of time and space in each other. Three-dimensionality creates a strict relationship (triangle is a rigid figure) between dimensions. The appearance of an opinion on the N-dimensional space, eliminates rigor in the description of space and allows the creation of variations (more precisely, violations) in the understanding of the existing Nature. Variations are easily described by a mathematical tool and require a "warping" of an understanding of physical processes. As a chemist, equidistant from physics, mathematics and reality, I consider N-dimensional space as the N-th number of process parameters. Each of the parameters is three-dimensional and is mutually present in the 3-dimensional space. For the existing Nature, there is no 4-dimensional Minkowski space. For mathematics is. But for mathematics there is antimatter (not to be confused with antiparticles - exceptions arise in dynamics, stability is observed in the rules) and there must be an antispaces. (An interesting point: antiparticles exist, and where are the elements of antispaces?).

Abstraction allows you to extrapolate reality into anti. Reality creates a conditional anti only by the disintegration of a single. For physics, the N-dimensional space of mathematicians, there is analog of the radiation spectrum and a theory close to fantasy, stimulating the desire to make a fairy tale happen. For reality, this is an opportunity to direct the movement into a dead end and then create a crisis. A crisis is an opportunity to realize alternative views and actions or the crisis will continue. But if the violas take the point as the starting point, after turning to a dead end, then they do not save the crisis from the crisis, although they are trying to improve the facade.

Defects of Natural Phenomena and Stability of Matter.

Defects arise, as reaction of counteraction, on changes in the Phenomena of the Nature. The defect can not be greater than the Nature Phenomenon or there is a limit for each defect and the amount of the

same defects. If in the system the defect has reached a maximum value, then the other defects of this Nature Phenomenon are zero. The presence of the limit of the sum of the defects affects the properties of the systems.

a) The defect of the volume of matter, in the form of a charge of electric, increases the stability of matter to decay and deformation, contributing to the preservation of the mass of the system. In an electron, the specific magnitude of the defect is higher than in the proton and the electron is more stable than the proton in decay.

The presence of a time defect creates a stability of the existence of matter. The presence of a mass defect allows the matter to retain its shape. At a neutron at rest, there are no mass and volume defects, which makes this elementary particle unstable in a free state. The neutron increases its stability, with increasing speed and being in unity with the protons in the nucleus.

b) A photon can be described as TdE_{mv} . Consequently, the most stable of material particles is a photon, as a particle consisting only of defects of the Phenomena of Nature. The photon does not break up into anything, it is an ideal stability for a complex system. Electromagnetic radiation, losing energy, becomes a Space that is much more stable than Ether.

c) The continuous synthesis of new matter requires the emergence of an opposing process. Such a process is the disintegration of matter into dual parts. Matter, forming defects of mass and volume, stabilizes the physical vacuum, from decay into dual parts.

c)

Short.

a) For dual Nature Phenomena, the predominance of one duality over another arises. In matter, the processes of separation and unification predominate. The processes of movement-rest prevail in the Ether.

b) The resulting defect in the volume of matter causes resistance, from the mass of matter, the formation of a magnetic field. Consequently, magnetic fields arise, as counteraction to a volume defect. As a result, any shock or movement of a mechanical wave generates electromagnetic radiation. And vice versa.

c) Why does a person seeing "now" do not see the past and the future? The reason is the huge difference in energy between "now" and the past - the future. The past is now without energy. Having given energy, "now" becomes a black / all absorbing past. The future, having an excess of energy relatively "now", is transparent to us.

d) Physical vacuum has a specific energy density, for this reason it must have a specific material density. The physical vacuum is complex matter, hence its density is the reciprocal of the neutron density.

f) The decomposition and synthesis of the ether, particles with a charge, creates an equilibrium state between the time-defect and the volume defect. It can be said that in the atom the volume defect compensates for the time defect. Consequently, the ratio of the atomic nucleus density to the atomic density is the ratio of the elementary electric charge to the Planck constant:

$$\rho_z / \rho_a = e / h$$

ρ is the density of the system, a is the atom, and z is the nucleus of the atom.

f) Superposition - the ability to be between "is-no". Examples outside of quantum physics: the moment "now" between the past and the future, the fluid between the solid and the gas. Centripetal acceleration is the change in speed in the direction, i.e. there is a change in the vector and there is no change in the vector. In other words, superposition is normal to the duality of "is-no".

The Heisenberg uncertainty principle is described for the fixed moment "now". With the moving moment "now" you can accurately know the location and speed. In the stopped moment "now" (quantum mechanics), the Heisenberg principle appears.

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