Gentlemen scientists, Astrophysicists!
Dear Ladies and gentlemen: I doubt the correctness of the translation of my scientific work. On this, i send you the full text in Russian.

The BIG BANG or QUANTUM THEORY of GRAVITY

(БОЛЬШОЙ ВЗРЫВ или КВАНТОВАЯ ТЕОРИЯ ГРАВИТАЦИИ)

According to Einstein's theory, a physical vacuum is "empty (without matter) space-time with elastic properties. These properties are manifested when a certain mass is placed in an empty space. Moreover, in theory, there are so-called vacuum Einstein's equations, which describe the gravitational (as EA said that the field outside matter, ie, in its pure form, the elastic properties of empty space-time). Einstein's vacuum equations are purely geometric and do not contain any physical constants. This is as it should be, because a vacuum cannot be characterized by anything specific. If the vacuum is endowed with some specific physical constants, it will be something born out of the vacuum.
For example: a Excess of dense, infinitely compressible and heat-generating substance. Only remains to find somewhere to post this stuff. The causal origin of this substance is experimental and secondary
The generation of elementary particles occurs in the relativistic space of time, usually seven-dimensional, ten-dimensional, those are, space of time, while the generation of macro particles requires a primary stationary, three-dimensional space of time. The stationary space of time is determined by random - objective coincidence of circumstances, in three-dimensional space of time, in the absence of fluctuation interventions, any dark energy density, with physical constants, with the temperature of the absolute zero of the vacuum, in order to avoid the Casimir Effect. In the presence of only a discrete, impulsive vacuum and a permanently expanding space of time. Relatively speaking, on the local center of the Universe, on the virtual, physical point of the "Big Bang". Or simply put, at the center of the Galaxy.
The first Creator of the revolutionary, expanding model of the Universe, Alexander Friedman, built his theory on the basis of equations characterizing the General theory of relativity. Of course, the generally accepted opinion in the scientific world of that time was the static nature of our world, so its scientific developments were not paid due attention.
After some time, astronomer Edwin Hubble made a discovery that confirmed the ideas of A. Friedman. It was discovered the removal of galaxies from the nearby milky way. At the same time, the fact of maintaining the proportionality of the speed of their movement to the distance between them and our galaxy became irrefutable. This discovery "explains the constant "run-up" of stars and galaxies in relation to each other, which leads to the conclusion of the expansion of the universe."
In the end, Friedman's conclusions were recognized by albert Einstein, later he mentioned the merits of the Soviet scientist as the founder of the hypothesis of the expansion of the Universe. We cannot say that there are contradictions between this theory and the General theory of relativity, but the expansion of the Universe had to be the initial impulse that provoked the scattering of stars. By analogy with the explosion, the idea was called the "Big Bang".
Nor does it fit the fact of the existence of the "Big Bang" as a detonator as the initial impulse that provoked the scattering of stars, and maybe the expansion of the Universe, due to the fact that galaxies and stars are claimed to be derivatives of the result of the "Big Bang". Of course, this is not disputed if the "Big Bang" shock wave continues to this day.
- If the Vacuum is an absolute stationary void, then how does the explosion produce an explosive wave that physically expands the boundless stationary, physically non-material universe even after the big Bang ends?
- if the expansion continues, even after the completion of the action of the Big Bang, it does not mean that the vacuum is endowed with, necessarily, inertial moment?
- what does the physical property of this virtual shock wave look like and what does it consist of?
- The big Bang is something permanent - progressive physical condition, or a powerful cotton of singularity, in the period of $\mathbf{10^{-43}}$- $\mathbf{10^{-27}}$ seconds?

Stephen Hawking and the anthropic principle

The result of calculations and discoveries of Stephen Hawking was the anthropocentric theory of the Universe. Its Creator claims that the existence of a planet so well prepared for human life cannot be accidental. Stephen Hawking's theory of the Universe also involves the gradual evaporation of black holes, their loss of energy and the emission of Hawking radiation. As a result of the search of evidence, were selected and tested more than 40 features, compliance with which is necessary for the development of civilization. American astrophysicist Hugh Ross made an assessment of the probability of such an unintentional coincidence. The result was a figure of 10-53.

Our universe consists of trillions of galaxies, 100 billion stars in each. According to the calculations made by scientists, the total number of planets should be $\mathbf{10^{20}}$. This figure is 33 orders of magnitude less than previously calculated. Consequently, none of the planets in all galaxies can combine conditions that would be suitable for the spontaneous emergence of life.

Big Bang theory

The origin of the Universe from a negligible particle Scientists supporting the big Bang theory share the hypothesis. The main postulate of the theory is the statement that before this event all the elements of the present Universe were enclosed in a particle of microscopic size. Within it, the elements were characterized by a singular state in which parameters such as temperature, density, and pressure could not be measured. They're endless. Matter and energy in this state are not affected by the laws of physics.

At the beginning of the XX century Albert Einstein published his own model of the Universe. According to his theory of relativity, two opposite processes occur simultaneously in the Universe: expansion and contraction. However, he agreed with the opinion of most scientists about the stationarity of the Universe, so they introduced the concept of the cosmic force of repulsion. Its action is designed to balance the attraction of stars and stop the process of movement of all celestial bodies to preserve the static nature of the Universe. The model of the Universe - according to Einstein - has a certain size, but there are no boundaries. This combination is feasible only when the space is curved in the way it happens in the sphere. The characteristics of the space of such a model are: three-Dimensionality, self-closure. Uniformity (absence of center and edge) in which galaxies are evenly spaced.

The system Galaxy, is by three-dimensional definition a coordinate, not moving, stationary space of time. The geometric discrete-impulsive expansion of the Universe, along spherical radial vectors, does not allow the center of galactic formations to go beyond the three-dimensional space of time, in order to maintain the stability of the generation processes and to avoid the Heisenberg uncertainty Principle, including.

After determining the coordinates, at random - objective coincidence of circumstances, the thermodynamic center, in three-dimensional space of time, subjected to a spherical discrete, impulsive expansion of the Universe (DIEU), from the center of the radial vectors generated virtual "Higgs Boson". The following events occur simultaneously:

- first, we must state the fact that the universe is the only one, the contents of vacuum, primary derivatives – system galaxies
- first, we must state the fact that the universe is the only one, the contents of vacuum, primary derivatives – system galaxies
- the energy of the material world and dirv IS in complementary non-allelic interactions with all derivatives, permanently
- if the symbol of absolute time to determine how - spherical elongation of a photon, (DIEU), with a speed of (conditional) 300 000 km per second, the absolute time is determined from the system component of matter, its static medium temperature > 0(absolute), influencing directly - progressive - proportional and density of its mass, back - progressive in proportion to the relative speed of elongation of the discrete-impulsive expansion of the Universe (DIEU) (Unified theory of interactions Discrete-impulsive expansion of the universe) (UTIDIEU)

- velocity (DIEU) is defined as the leading moment of the spherical amount of motion with respect to the driven quantum of energy
- "Higgs boson" being in the center, is subjected to active impulsive expansion and compression at passive discrete-impulsive rest.
- Electrostatic forces are generated at the boundary of the Higgs Boson surface
- between the inner and outer spaces of the Higgs Boson, the difference in the magnitude of the physical pressure, the moment of the Isobaric state, is generated
- electrostatic forces accumulate inside and outside the Higgs Boson
- the impulsive expansion and contraction of the surface of the Higgs Boson subjects to the orbital rotation of electrostatic forces between the inner and outer spaces of the Higgs Boson»
- positive electrostatic forces popping out into the outside partially waste energy and being in the center of the isothermal process, weak discrete-impulsive expansion, dominate the tensor field, bubbles "Higgs Boson»
- while still in the outer part of the Higgs Boson, the thermodynamic particle undergoes spherical stretching of discrete-impulsive expansion, being between two different pressures of the Higgs Boson, takes a rotational motion (spin) inside the bubble, the Higgs Boson under a 90-degree curvature, relative to the internal and external, opposite vectors of the tensor field,
- returning back inside the "Higgs Boson", already inside the bubble, with a certain spin, being subjected, in the framework of the Isobaric process, the internal high pressure is compressed
- thermodynamic particles with spin, in the bubbles of "Higgs Boson", with the same positive pole, repel each other and rotate in a spherical orbit, between the inner and outer side of the "Higgs Boson", in different, scalar, large-scale semi-axes of the spherical orbit, without intersecting, rounding each other at the same time
- Internal entropy, a conditional adiabatic system, loses its eigenvalue to zero
- high internal pressure of "Higgs Boson" is compensated by external lost energy
- spherical discrete impulsivity(fluctuation) expands and contracts at a speed within the speed of light

- average static temperature > 0(absolute), directly progressive-proportional, mass density inversely progressive - proportional to the velocity of discrete-impulsive expansion of the Universe

Scientists believe that dark matter interacts with ordinary, exclusively, only through gravity, the creation of mass, and giving it the value of the Higgs Boson, is a key moment to understand exactly how this happens. The main drawback of the Standard model was that it could not explain the action of gravity – a model that could be called a great unified theory.

Such, which is a Discrete-Impulsive Expansion of the Universe (DIEU).

The Compton Effect

He explains the fact that the incoherent scattering of photons by free electrons, the fact that photons before and after the scattering does not interfere. The effect is accompanied by a change in the frequency of photons, part of the energy (the difference between the phases of vibrational, wave effects of electrons, different atomic characteristics) which, after scattering, is transmitted to electrons. This fact explains nekorrelirovannogo frequency of the photons at the time of Stripping their frequency DIEU and their appearance with an arbitrary point in the back.

Here's how scientists explain the property of dark energy, in terms of physical constants: Physical constants of vacuum, conventionally indicated the nature of dark energy. The essence of dark energy is a matter of debate. It is known that according to scientists: it is very evenly distributed, has a low density, and does not interact in any noticeable way through the known fundamental types of interaction — with the exception of gravity. Since the hypothetical density of dark energy, according to scientists, is not too high — about $\mathbf{10^{-29}}$ grams per cubic centimeter — it is unlikely to be detected by laboratory experiment (although there were already statements about such detection). It is assumed that dark energy can have such a profound effect on the Universe (accounting for 70% of all energy) only because it uniformly fills the empty (in some respects) space, according to scientists. According to scientists, there are two main models that explain the nature of dark energy: "cosmological constant" and "quintessence".

The simplest explanation of scientists, supporters of the cosmological constant, is that dark energy is simply the "cost of existence of space": that is, any volume of space has some fundamental, inherent energy. It does not matter that it is not a material vacuum or a low-temperature void. This is the cosmological constant, sometimes called (by the name of the Greek letter Λ, used to refer to it in the GRT equations) "lambda-term" (hence the "lambda-CDM model"). Since energy and mass are related by E = mc2, Einstein's General theory of relativity predicts that dark energy must have a gravitational effect. But what and how? It is sometimes called vacuum energy because it is the energy density of pure vacuum, without even disputing the fact that there is no material density of pure vacuum. Many physical theories of elementary particles lead to the existence of vacuum fluctuations, that is, give vacuum this kind of energy. Of course, the intuition about the necessity of the existence of which - or whether fluctuations are still bothered scientists. The value of the cosmological constant was even estimated in the order of $\mathbf{10^{-29}}$g $\mathbf{/см^3}$, or about $\mathbf{10^{-123}}$ in Planck units.

Consider the spectrum of Physical constants: the speed of light, Planck constant, gravitational constant G, Boltzmann constant k, elementary charge e (or fine structure constant) and cosmological constant (Lambda), electron mass, proton mass, neutron mass, Faraday constant, Universal gas constant, specific molar volume of an ideal gas, standard atmospheric pressure, boron radius, Hartree energy, Rydberg constant, the Bohr magneton, the Magnetic moment of the electron g-factor of free electron, the nuclear magneton, the magnetic moment of the proton, the gyromagnetic ratio of the proton, the first radiation constant second radiation constant Stefan-Boltzmann constant, a constant Fault, the standard acceleration of free fall on the Earth's surface, the temperature of the triple point of water, all those physical constants arise in the framework of space - time and fundamental interactions:

All physical constants involved, or occur in all interactions only through the carrier of a Unified theory of interaction, discrete and impulsive expansion of the Universe (UTIDIEU). Mathematical formulation defines it as a common denominator of all theoretical foundations of physical, chemical, biological interactions.

The first law of thermodynamics is a generalization of experimental facts. According to this law, energy cannot be created or destroyed; it is transferred from one system to another and transformed from one form to another. "Energy cannot be created or destroyed!"

Virtually, the First law of Thermodynamics, as a theory, has coexisted since the existence of the Universe, began and continues to function thanks to the amount of useful work (UTIDIEU).

Along with isochoric, Isobaric and isothermal processes in thermodynamics, processes occurring in the absence of heat exchange with surrounding bodies are often considered. Such processes are called adiabatic. In a virtual Adiabatic process (UTIDIEU) inside, relatively speaking, the Higgs Boson (HB) expands, the temperature falls below the BH than around T2 < T1 (T2 is the temperature inside the (HB), T1 is the temperature of the outside of (HB) converts the negative electrostatic forces. In the period between the DIEU (discrete period), the amount of temperature BX is compressed and the temperature inside (HB) (T2 > T1) increases, a conversion of the positive electrostatic force occurs. According to Gay Lussac's law, V/T= const, the inflationary temperature is compensated.

2-nd Law of Thermodynamics - As you know, the first beginning of thermodynamics displays the law of conservation of energy in thermodynamic processes, but it does not give an idea of the direction of the processes. In addition, you can come up with a lot of thermodynamic processes that will not contradict the first beginning, but in reality such processes do not exist.

The existence of the second law (beginning) of thermodynamics is caused by the need to establish the possibility of a process. This law determines the direction of flow of thermodynamic processes. In the formulation of the second principle of thermodynamics, the concepts of entropy and Clausius inequality are used. In this case, the second law of thermodynamics is formulated as the law of entropy growth of a closed system, if the process is irreversible.

Casimir effect

The effect of mutual attraction of conducting uncharged bodies under the action of quantum fluctuations in vacuum. Most often we are talking about two parallel uncharged mirror surfaces placed at a close distance, but the Casimir effect exists for more complex geometries.

For optically anisotropic bodies, the occurrence of Casimir torque is also possible, depending on the mutual orientation of the main optical axes of these bodies.

The cause of the Casimir effect is the energy fluctuations of the physical vacuum due to the constant birth and disappearance of virtual particles in it. The effect was predicted by the Dutch physicist Hendrik Casimir(1909-2000) in 1948 and later confirmed experimentally.

The essence of the effect is explained in this way:

According to quantum field theory, a physical vacuum is not an absolute void. It constantly appearing and disappearing virtual pairs of particles and antiparticles, there are constant oscillations (fluctuations) associated with these particle fields. In particular, there are oscillations of the electromagnetic field associated with photons. Virtual photons corresponding to all wavelengths of the electromagnetic spectrum are born and disappear in vacuum. However, the situation is changing in the space between closely spaced mirror surfaces. At certain resonant lengths (an integer or half-integer number of times stacked between surfaces), electromagnetic waves are amplified. At all other lengths, which are greater, on the contrary, are suppressed (that is, the birth of the corresponding virtual photons is suppressed). This is due to the fact that in the space between the plates there can be only standing waves whose amplitude on the plates is zero. As a result, the pressure of virtual photons from the inside on two surfaces is less than the pressure on them from the outside, where the birth of photons is unlimited. The closer to each other surfaces, the less wavelengths between them is in resonance and more — is suppressed. This state of vacuum in the literature is sometimes called the Casimir vacuum. As a result, the force of attraction between the surfaces increases. The phenomenon can be figuratively described as "negative pressure", when the vacuum is deprived not only of ordinary, but also of part of the virtual particles, that is, "pumped out everything and a little bit more." The Scharnhorst effect is also associated with this phenomenon.

Consider The Scharnhorst Effect

A hypothetical experience in which a light signal can move between two closely spaced plates faster than the speed of light. The phenomenon is predicted by Klaus Scharnhorst of Humboldt University (Germany) and Gabriel Barton of the University of Sussex (England). Scharnhorst brought up the effect on the basis of mathematical analysis of quantum electrodynamics.

Scharnhorst brought up the effect on the basis of mathematical analysis of quantum electrodynamics. In accordance with Heisenberg's uncertainty principle, the empty space considered to be a total vacuum is actually filled with virtual subatomic particles called vacuum fluctuations. When a photon moves in a vacuum, it interacts with these virtual particles and, when absorbed, can generate an electron-positron pair. This pair is unstable and quickly annihilates — in physics, the reaction of turning a particle and an antiparticle when they collide into any other particles other than the original ones. The most studied is the annihilation of an electron-positron pair, with the emission of a photon similar to the absorbed one. According to the lifetime of the photon energy in the form of a pair electron-positron significantly reduces the observed speed of a photon in a vacuum, since the photon turns into a particle to the speed of light. Based on this conclusion, it was assumed that the speed of the photon will increase when moving between the Casimir plates.

Effects of physicists, Casimir, Scharnhorst, Barton confirm the presence of fluctuations in different areas of physical vacuum. Explaining that the vacuum is not an absolute void. Unfortunately, they did not go further and did not delve into the essence of the study of the source of the formation of fluctuations. Almost all of them were one step away from the truth, the definition of the Theory of Everything.

The unified Theory of Interactions of discrete-impulsive expansion of the Universe (UTIDIEU) with the speed of light, along the radial directions of the vector of the virtual sphere, on randomly located centers of supersymmetry generates analogues of the "Higgs Boson", which are known as "bubbles" of dark energy. Any positive change in temperature (involving the constant of the 1st and 2nd laws of thermodynamics) is absorbed by a discrete-impulsive expansion, from the center of each spherical point along radial vectors, by a spherical removal, around the spherical center of the thermo-manifestation.

Based on this nature of the world order, photons of the quantum and other energy particles and masses are only the moment of the source of thermal energy, and the moment of generation, and their General interaction, they are given by the force (UTIDIEU) coming from the center of the spherical shell of each source. Spherical, spherical removal of thermal energy is separated by discrete-impulsive, spherical corpuscular-wave emanation effect.

Einstein once again continued intuitively - coming close to the idea of the existence of impulsivity of permanent expansion of the Universe, offering to discuss another postulate on which his theory is based – "the constancy of the speed of light does not depend on the state of motion of the emitting body of light." His Postulate once again

confirms that the body emitting light is not an attractor of maintaining and spherical propagation of the speed of light, but becomes an equal participant in the complementary non-allelic interaction surrounding it with a complex of forces of physical constants arising from the simulation of discrete-impulsive expansion of the Universe.

Vacuum fluctuations occur due to discrete impulsivity of the Universe expansion, and the motion of the photon in vacuum, including the result of discrete impulsivity of the nature of the expansion. This explains the spherical, super symmetrical appearance from atomic to planetary structures, celestial bodies, the functioning of biological mutations, chemical reactions, the origin and evolution of fauna and flora, mind and consciousness, the origin of supersymmetry.

If we consider the participation of physical constants in complementary non-allelic physical interactions, on the main world line, with conditional placement, in a set of three-dimensional spaces - a single absolute time, we find the total energy Moment a Unique Resonant Period Of Engagement (MURPE). A similar picture of the world order can be observed in a wide range of scales, where micro elementary particles are involved copulating with macro planetary systems in physical interactions. So, (UTIDIEU) and gives rise to a permanent interaction of participants of the General world order.

Anthropic principle

The most important unsolved problem of modern physics is that most quantum field theories, based on the energy of quantum vacuum, predict a huge value (70%) of the cosmological constant by about 123 orders of magnitude higher than the permissible cosmological representations. This value, therefore, should be compensated by some action, almost equal (but not exactly equal) in modulus, but having the OPPOSITE SIGN.

Some supersymmetry theories (SATHISH) require that the cosmological constant be exactly zero, which also does not contribute to solving the problem. This is the essence of the "cosmological constant problem", the most difficult problem of "fine tuning" in modern physics: there is no way to deduce from the physics of elementary particles the extremely small value of the cosmological constant defined in cosmology. Some physicists, including Steven Weinberg, consider the so-called "anthropic principle" the best explanation for the observed fine balance of quantum vacuum energy.

The problem is that to date, the scientific community has considered the interaction of quantum vacuum energy as a purely local source, generation and transmission of energy. As for the Cosmological constant, this definition also requires correction of the concept itself. Since the energy of quantum vacuum must be taken as a discrete-impulsive expansion of the vacuum (Universe), as a carrier of quantum and any other energy and heat. As source IC vector of all shared interactions, relationships and vzaimoraschetyi. In this connection, I propose, if it is so important for the scientific community, then, the Cosmological constant to bring to absolute 0 (zero) and the state of Discrete-Impulsive Expansion of the Universe, at a speed of 300 000 km/s, to designate "Absolute zero".

As source IC vector of all shared interactions, relationships and vzaimoraschetyi.

In their scientific works, M. Planck and De Broglie, gave examples, which today is confirmed for, the evidence of the existence of a Unified theory of interaction between Discrete and Impulsive Expansion of the Universe (DIEU). Quantum mechanics is based on Planck's idea of the discrete nature of changes in the energy of atoms, and Einstein's idea of photons is based on the quantization of certain physical quantities (for example, momentum and energy) that characterize the States of microworld particles under certain conditions. At the same time, it was firmly established that light exhibits the properties not only of the particle flow, but also of the wave, that is, it has a particle-wave dualism.

De Broglie put forward the idea that the wave character of propagation established for photons has a universal character. It must be manifested for any particles with momentum. All particles having a finite pulse have wave properties, in particular, are subject to interference and diffraction, each micro-object has both corpuscular and wave characteristics.

In 1924, the French scientist Louis de Broglie voiced the hypothesis that wave-particle dualism is inherent in every kind of matter without exception — electrons, protons, atoms, and the quantitative relations between wave and particle corpuscular properties are the same as those established earlier for photons. That is, if the particle has energy E and momentum, the absolute value of which is equal to p, then this particle is associated with the wave frequency v=E/h and length, where h — in this case is the Planck constant.

This is the famous formula of de Broglie is one of the most important formulas in the physics of the microworld.

It should be noted that the wavelength of the de Broglie wavelength decreases with increasing mass of the particle m and its velocity -v.

This pattern again explains that (UTIDIEU) thoroughly - for all energy sources, according to proportion, and relative to physical constants.

Scientists have divided the Anthropic principle into two independent, physically characterized principles. Consider the Weak anthropic principle.

"A weak anthropic principle in the formulation of G. M. Idlis (1958): "We are not observing an arbitrary region of the Universe, but the one whose special structure made it suitable for the emergence and development of life." As academician L. B. Okun Clarifies, "the weak anthropic principle comes from the idea of an ensemble containing an infinitely large number of universes."This means that in the Universe there are different values of the world constants, but the observation of some of their values is more likely, because in regions where the values take these

values, the probability of the observer. In other words, the values of the world constants, sharply different from ours, are not observed, because where they are, there are no observers."

If the universe is homogeneous, its density is the same in all regions, the probability of occurrence of world constants should also be the same, because, special structures, as they say, one world mazana. World constants have always existed, virtually, even before the birth of the first galaxies, as they are not material, but mentally imaginable theoretical concepts. The discrete-impulsive - expanding universe is homogeneous, nor has a beginning, infinitely and infinitely. All probable observers are derivatives of the process of the Single Discrete-Impulsive expansion of the Universe (UTIDIEU).

It seems to me that the main task of peacekeeping is not the probability of an observer, but the transformation of a non-material vacuum into a material world. On the scale of the boundless Universe, the period of existence of the observer's life is not significantly different from the period of existence of quarks. Today, the presence of observers and the process of their existence, in the General process of settling the Universe by the participants of interaction, look like adapted microparticles on the body of macro-system participants. Observers, as derivatives of macro worlds, do not participate and will not be able to change the Unified theory of interaction, the General construction of the universe and change its physical strength, affecting the processes of the universe of lawmaking. It remains only to learn and adapt to a comfortable, permanent coexistence on easily accessible, safe, viable planetary systems of a beautiful, harmonious universe.

Consider the Strong anthropic principle.

- The universe must have properties that allow intelligent life to develop. The next variant of strong AP is APU (Anthropic principle of participation), formulated in 1983 by John Wheeler:

The original text (eng.): Observers are necessary for finding the Universe of being

The difference between these formulations can be explained as follows: a strong anthropic principle applies to the Universe as a whole at all stages of its evolution, while the weak applies only to those regions and those periods when it can theoretically appear intelligent life. A strong principle implies a weak one, but not Vice versa.

The formulation of the anthropic principle is based on the assumption that the laws of nature observed in our time are not the only ones that actually exist (or existed), that is, there must be real Universes with other laws. Physicists have investigated several variants of placement in space and time of alternative Universes:

- One universe — in the course of infinite evolution, in which the physical constants change, taking all possible values. With a favorable combination of constants, there is a reasonable observer.
- One universe is divided into many non-interacting spatial regions with different physical laws. In those areas where there is a favorable combination of fundamental constants, there is a reasonable observer.
- Many parallel worlds (Multiverse), implementing various laws of nature.

- First, the physical constants that existed and exist before and after infinite evolutions, by definition, can not change, except that the values fluctuate in empirical interactions.
- Secondly, one universe is not broken, and gave rise to a set of non-interacting, spatial areas with similar physical constants, which similarly continue to generate the material world, in those areas, where there is a favorable combination of universal fundamental constants on the quantum field of supersymmetry
- Third, many parallel worlds, galactic systems are implemented on the basis of General laws of nature, physical constants, generating different in form, identical in content participants interactions and coexistence

The above-mentioned APP (Anthropic principle of participation) of Wheeler means that Universes without a reasonable observer do not acquire the status of reality. The reason for this is that only the observer is able to carry out the reduction of the quantum state, which translates the ensemble of possible States into one, real. (A reasonable observer is a derivative of the signature of the physical constants of the universe and a product of the status of its reality).

The General fluctuation (discrete-impulsive expansion of the Universe) (DIEU) setting the physical beginning and interaction of all existing, in the only Universe, excludes, even theoretical possibilities of existence of other real universes.

The reduction of von Neumann.

The reduction or collapse of the wave function, the instantaneous change in the description of the quantum state (wave function) of the object that occurs when measuring this process is not significantly local, but from the instantaneous change, it follows the propagation of interactions faster than the speed of light, it is considered that it is not a physical process, but a mathematical.

However, some researchers believe that reduction reflects real physical processes with measurable effects. In particular, Roger Penrose believes that it is necessary to develop a new theory that will include "objective reduction of wave functions". Despite the instantaneous action, the reduction of the principle of causality is not violated, and the information is not transmitted. Experiments are also carried out to transfer physical objects on the verge of micro-and macrocosm to the state of quantum superposition.

Quintessence

An alternative approach is based on the assumption that dark energy is a kind of particle-like excitation of a dynamic scalar field called quintessence.

An alternative approach is based on the assumption that dark energy is a kind of particle-like excitation of a dynamic scalar field called quintessence. To quintessence could not "assemble" and form large-scale structures on the example of ordinary matter (stars, etc.), it must be very light, that is, have a large Compton wavelength.
No evidence of the existence of quintessence has yet been found, but such existence cannot be ruled out. The quintessence hypothesis predicts a slightly slower acceleration of the Universe compared to the cosmological constant hypothesis. Some scientists believe that the best evidence in favor of quintessence would be violations of Einstein's equivalence principle and variations of fundamental constants in space or time. The existence of scalar fields is predicted by the standard model and string theory, but this raises a problem similar to the cosmological constant variant: renormalization theory predicts that scalar fields must acquire significant mass.
However, many quintessential models provide for so-called "tracking behavior" that solves this problem. In these models, the field of quintessence has a density that adapts to the radiation density (not reaching it) until the moment of development of the "Big Bang", when the equilibrium of matter and radiation is formed. After this moment, the quintessence begins to behave as the desired "dark energy" and eventually dominates the Universe. This development naturally establishes a low energy level of dark energy.
Other possible types of quintessence have been proposed: phantom energy, for which the energy density of the quintessence increases with time; and the so-called "kinetic quintessence", which has the form of non-standard kinetic energy. They have unusual properties: for example, phantom energy can lead to a Large Gap in the Universe.
The scientist Heisenberg developed the uncertainty principle. Within the widely but not universally accepted Copenhagen interpretation of quantum mechanics, the uncertainty principle is adopted at the elementary level. The physical universe does not exist in a deterministic form, but rather as a set of probabilities or possibilities. For example, the pattern (probability distribution) produced by millions of photons diffracting through a slit can be computed by quantum mechanics, but the exact path of each photon cannot be predicted by any known method.
The Copenhagen interpretation believes that this cannot be predicted by any method at all.
It was this interpretation that Einstein questioned when he wrote to max Bourne: "God does not play dice." Niels Bohr, who was one of the authors of the Copenhagen interpretation, replied, "Einstein, don't tell God what to do." This Bohr expressed the truth: "GOD" (the Theory of everything, the unified theory of all interactions) does what needs to be done.
Einstein assumed that there are hidden variables in quantum mechanics that underlie the observed probabilities.
Neither Einstein nor anyone else has since been able to construct a satisfactory theory of hidden variables, and bell's inequality illustrates some very thorny paths in trying to do so.
Although the behavior of an individual particle is random, it is also correlated with the behavior of other particles. Therefore, if the uncertainty principle is the result of some deterministic process, it turns out that particles at large distances must immediately transmit information to each other to guarantee correlations in their behavior.

Consequences for the fate of the Universe

According to scientists, the acceleration of the Universe began about 5 billion years ago. It is assumed that before this expansion was slowed down due to the gravitational action of dark matter and baryonic matter. The density of dark matter in an expanding Universe decreases faster than the density of dark energy. Eventually, dark energy begins to prevail. For example, when the volume of the Universe doubles, the density of dark matter halves, and the density of dark energy remains almost unchanged (or exactly the same — in the version with the cosmological constant).
I want to remind that as that, A. Einstein said that fields out of matter, i.e. in pure form elastic properties of empty space-time. So, in the expanding Universe, the density of dark matter is equal to 0 (absolute zero) and can not decrease either. The density of dark energy is also equal to -0(absolute zero), since energy and mass are related by the ratio $\mathbf{E = mc^2}$, Einstein's General theory of relativity, if matter is equal to -0(zero), then what generates energy?
«If the acceleration of the Universe continues indefinitely, then the galaxies will be beyond our Supercluster. Galaxies will sooner or later go beyond the event horizon and become invisible to us, because their relative speed will exceed the speed of light. This is not a violation of special relativity. In fact, it is impossible even to determine the "relative velocity" in curved space-time. The relative velocity makes sense and can only be determined in flat space-time, or on a sufficiently small (zero-tending) portion of curved space-time. Any form of communication beyond the event horizon becomes impossible, and any contact between objects is lost. The earth, the Solar system, our Galaxy, and our Supercluster will continue to exist, while the rest of the universe will disappear in the distance. Over time, our Supercluster will come to a state of thermal death, that is, the scenario that was supposed for the previous, flat model of the Universe with the predominance of matter will be realized**»**.
I would interpret this state of acceleration of the Universe (although I have already said that the discrete-impulsive expansion of the Universe, the value - constant) as follows: the universe has neither beginning nor end. It expanded spherically and to the generation of the material world and permanently continues and will continue to expand, without changing the value of its physical constants (discrete-impulsive expansion constant). Galaxies expand in unison with the constant of physical discrete-impulsive expansion of the Universe, without moving in space, as a substance of kinetic supersymmetry. Work on the origin of the material world begins simultaneously with the entry into legal rights, the 1st and 2nd law of thermodynamics, in the generating connection of energy and mass, with the ratio $\mathbf{E = (tk>0)\ c^2}$ (the physical change in temperature is greater than absolute zero, multiplied by the speed of

light, 2nd degree). After generating the mass energy, determine the linearity of the space of time and the sides of the poles of light, the formula will change and will look like $\mathbf{E = (tk>0)\, c^2/m}$-temperature change,
relative to absolute zero, divided by the energy mass multiplied by the square of the speed of light. Galaxies have the geometry of a flat Euclidean space of time, which is the phase transition of the generation of the organic world, in the space of time of physical constants.
«There are also more exotic hypotheses of scientists about the future of the Universe. One of them suggests that the phantom energy will lead to the so-called, "divergent" expansion. This implies that the expanding force of dark energy will continue to increase indefinitely until it surpasses all other forces in the Universe».
In this scenario, dark energy will eventually tear apart all the gravitationally bound structures of the Universe, then surpass the forces of electrostatic and nuclear interactions, tear apart atoms and destroy the Universe in a Large Gap».
«On the other hand, dark energy can eventually dissipate or even change the repulsive effect on the attracting. In this case, gravity will prevail and lead the Universe to a Big Clap».
Of course, maybe I do not see how you can destroy the Universe, and someone can understand how you can destroy a vacuum that has no beginning or end. Even with content oktillion, nonillion or decillion, galaxies still remains, in its scope, relatively - empty vacuum. Void, that cannot be to sever, simply for the reason, the primitive speaking, that not for that hook on, that would endless and endlessly drag out.
Alternative scenarios assume a "cyclic model". Paul Steinhardt, Director Of the Institute of theoretical science at Princeton University, and Neil Turok, winner of the Maxwell medal and the prestigious TED international prize, Director of the canadian Institute for advanced research in theoretical physics of the Universe. Although all these hypotheses are not yet confirmed by observations, they are not completely rejected. A crucial role in determining the ultimate fate of the Universe (developing on The big Bang theory), should play an accurate measurement of the rate of acceleration.

The Steinhardt-Turok Cyclic universe (Paul Steinhardt and Neil Turok)

Dark matter and dark energy

Let me quote the following comments: «The Big Bang theory is trusted by the vast majority of scientists studying the early history of our Universe. It really explains a lot and does not contradict the experimental data in any way».
“Recently, she has a competitor in the face of a new, Cyclic theory, the basis of which was developed by two extra-class physicists — Director of the Institute of theoretical science at Princeton University Paul Steinhardt and winner of the Maxwell medal and the prestigious international Ted prize Neil Turok, Director of the canadian Institute for advanced research in the field of theoretical Physics (Perimeter Institute for Theoretical Physics)”.
With the help of Professor Steinhardt, "Popular mechanics" tried to talk about the cyclic theory and the reasons for its appearance.
"Modern physical theories are simply not able to work meaningfully with shorter periods of time (it is believed that this requires a quantum theory of gravity, which has not yet been created)."
"The concept of inflation is an indispensable part of the standard cosmological theory. After the end of inflation, gravity took over, and the universe continued to expand, but at a decreasing rate.»
"Continuing the scientific excursion, we assumed that such evolution lasted for 9 billion years, after which another antigravity field of yet unknown nature, which is called dark energy, came into play. It again brought the Universe into a mode of exponential expansion, which seems to be preserved in future times."
"This theory has solved several fundamental problems that previous cosmology failed to solve."
"For example, she explained why we live in a Universe with flat Euclidean geometry — in accordance with the classical Friedman equations, this is how it should be determined with exponential expansion."
"The inflationary theory explained why space matter has a grain size at scales not exceeding hundreds of millions of light years, and at long distances is evenly distributed. It also gave an interpretation of the failure of any attempt to detect magnetic monopoles, very massive particles with a single magnetic pole that are believed to have been born in abundance before inflation (inflation has stretched outer space so much that the originally high density of monopoles has been reduced to almost zero, and so our instruments cannot detect them)."
"It is possible that our universe came out of the fluctuation zone formed in the world-predecessor."
The theory of Steinhardt and Turok, among the innovators, is not the first and certainly not the last. However, today it is developed in more detail than the others and better explains the observed properties of our world. The first approach gives a more vivid picture of the cosmological processes, so that it will stop.
"The most advanced version of string theory is known as M-theory. She argues that the physical world has 11 dimensions, ten spatial and one temporal. It floats space of smaller dimensions, the so-called branes".
"Our universe is one of these branes with three spatial dimensions. It is filled with various quantum particles (electrons, quarks, photons, etc.), which are actually open vibrating strings with a single spatial dimension — length. The ends of each string are firmly fixed inside the three-dimensional Brana, and the string cannot leave Brana. But there are also closed strings that can migrate beyond bran — these are gravitons, quanta of the gravitational field."
"The cyclic theory, so explains the past and future of the universe and the first place now takes the dark energy, which causes our Universe to expand exponentially, periodically doubling the size. As a result, the density of matter

and radiation is constantly falling, the gravitational curvature of space is weakening, and its geometry is becoming more flat."
"All this time, the distance between the branes is virtually unchanged."
"And then these parallel branes begin to converge. Pushes them towards each other the force field, the energy of which depends on the distance between branes. Scientists confirm that it is this field that provides the effect, which is explained by the presence of dark energy.
Therefore, in our world, the density of particles and radiation will remain almost zero, and the geometry — flat. Despite the fact that they say about the fall to zero, they still confirm that both branes will continue to expand.
This collision replaces the Big Bang of inflationary cosmology. It is very important that all newly emerged matter with positive energy appears due to the accumulated negative energy of the interbrane field, so the law of conservation of energy is not violated."
I would have interpreted differently, the corresponding nature of the newly generated matter. Products (fragments) of the Big Bang can not adopt spin and wave-particle dualism for further interaction with the rest of the participants in the peacekeeping process of the universe. In the process of global destruction, a sharp change in the energy density of the fields should be caused by electromagnetic, gravitational, strong, or at least weak nuclear interactions. Or, for some physical constants and with such ease, the branes can change the density of their own energy and its geometric value, and maneuver in 11 dimensional space.
The cyclic theory does not explain the source of quantum fluctuations, which are the precursors of galaxies. There are periodic phase intensive of birth:- matter - radiation part of the radiation into the interactions of physical reincarnation. So, what unified force controls the sequence of participation of physical constants in the simulation of phase processes?
The cyclic theory exists in several versions, as well as the theory of inflation. However, according to Paul Steinhardt, the differences between them are purely technical and interesting only to specialists, the General concept remains the same: "first, in our theory there is no moment of the beginning of the world, no singularity."
"There are periodic phases of intense birth of matter and radiation, each of which, if desired, can be called the Big Bang."
"The second key difference is the nature and role of dark energy. Inflationary cosmology did not predict the transition of the slowing expansion of the Universe to an accelerated one. And when astrophysicists discovered this phenomenon, watching flashes of distant supernovae, standard cosmology did not even know what to do with it. The dark energy hypothesis was put forward simply in order to somehow tie the paradoxical results of these observations to the theory."
Apparently, i don't understand something, it turns out that the «Hypothesis of dark energy» played the role of a catalyst and a standard cosmology has not explained the nature of the suspected dark energy in spite of that, still approved that a decelerating expansion of the Universe entered a phase of accelerated expansion.
"And our approach is much better bound by internal logic, because dark energy is present in us initially and it provides the alternation of cosmological cycles." However, as Paul Steinhardt notes, there are weaknesses in the cyclic theory:
"We have not yet been able to convincingly describe the process of collision and rebound of parallel branes taking place at the beginning of each cycle. Other aspects of the cyclic theory are much better developed, and there are still many uncertainties to be resolved." But even the most beautiful theoretical models need to be tested. Is it possible to confirm or refute a cyclic cosmology using observations? "Both theories, both inflationary and cyclical, predict the existence of relic gravitational waves, — explains Paul Steinhardt — In the first case, they arise from the primary quantum fluctuations, which in the course of inflation are smeared over space and generate periodic oscillations of its geometry - and this, according to the General theory of relativity, is the waves of gravity.
"In our scenario, the root cause of such waves are also quantum fluctuations — the ones that are amplified in the collision of bran. Calculations have shown that each mechanism generates waves with a specific spectrum and specific polarization. These waves were obliged to leave prints on the cosmic microwave radiation, which serves as an invaluable source of information about the early cosmos."
"While such traces could not be found, but most likely it will be done within the next decade. In addition, physicists are already thinking about direct registration of relic gravitational waves with the help of spacecraft, which will appear in two or three decades."
Another difference, according to Professor Steinhardt, "is the temperature distribution of the microwave background radiation: "This radiation coming from different parts of the sky is not quite uniform in temperature, it has more or less heated zones. At the level of accuracy of measurement, which provides modern equipment, the number of hot and cold zones is about the same, which coincides with the conclusions of both theories — and inflation, and cyclic".
"I hope that the results of these experiments will help to make a choice between inflation and cyclical theories. But it may also happen that the situation will remain uncertain and none of the theories will receive unambiguous experimental support. Well, then, we'll have to come up with something new."
"Before this happened, the field began to oscillate rapidly, generating elementary particles. As a result, by the end of the inflationary phase, the universe was filled with super-hot plasma consisting of free quarks, gluons, leptons and high-energy quanta of electromagnetic radiation."

A radical alternative

As Paul Steinhardt himself said about "Popular mechanics", the inflation hypothesis does reveal many cosmological mysteries, but this does not mean that there is no point in looking for other explanations: "at First I was just interested in trying to understand the basic properties of our world without resorting to inflation."

"Later, when i delved into this problem, i was convinced that the inflation theory is not as perfect as its supporters claim. When inflationary cosmology was first created, we hoped it would explain the transition from the original chaotic state of matter to the present ordered Universe.

"Later, when I delved into this problem, i was convinced that the inflation theory is not as perfect as its supporters claim. When inflationary cosmology was first created, we hoped it would explain the transition from the original chaotic state of matter to the present ordered Universe.

"In short, we were building a theory to explain our own world, and it got out of control and gave rise to an endless variety of exotic worlds, but this just does not work. Moreover, the standard theory cannot explain the nature of the earlier state prior to the esponential expansion. In this sense, it is as incomplete as pre-inflationary cosmology. Finally, it is unable to say anything about the nature of dark energy, which has been controlling the expansion of our Universe for 5 billion years."

I would suggest that Paul Steinhardt and Neil Turok go further, and in another alternative way, wrap bran in spherical geometry on the one hand and oppose him to the second Battle, as the surrounding space of time with its Constant, Discrete - impulsive expansion of the Universe.

- "nature tends to move from less(perfect) probable States to more (perfect) probable."
- The main thing for Observers is to harmoniously adapt to the complementary, and physical, and human interactions in their environment.

I sincerely wish all talented scientists great scientific success.

With respect,

Agadadash Kerimov

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