Universe is a solid elastic continuum.

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Novels by Vladimir Dudintsev "white robes", Aleksandr Solzhenitsyn's "The First Circle" and Mikhail Bulgakov's "Heart of a Dog" will be eternally relevant in Russia.

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The whole theme is available in the Internet in 2005.

Abstract. The universe is a solid elastic continuum - gukuum. This continuum does not contain any numerical parameters or constraints.

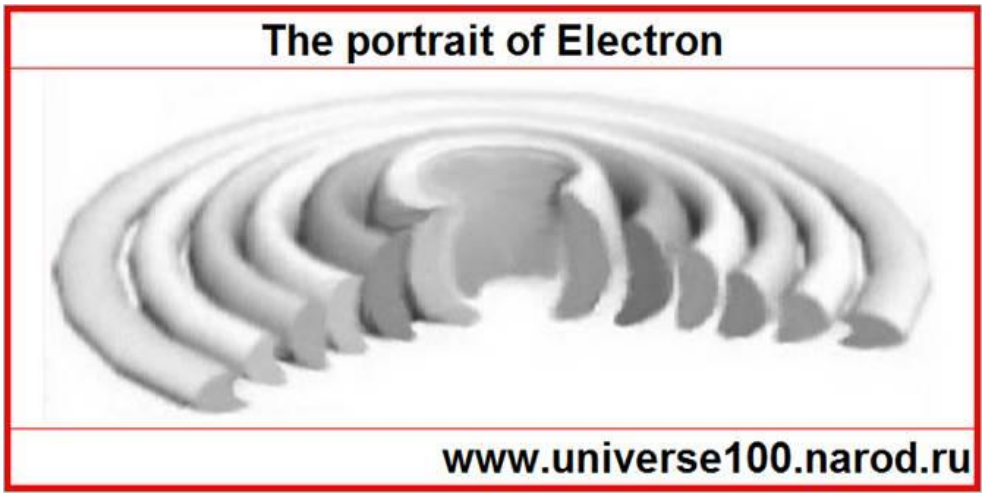
All visible and invisible objects of the universe, from large to small, are wave objects in this continuum.

All the wave objects in the gukuum are described by the letter specification of the elasticity parameters of the solid body and the three-dimensional wave equation.

The nonlinearity that exists in the universe is explained by the law of "winding the linear solution on itself." As a result of such winding, or layering, the linear solution becomes non-linear and creates the entire variety of the material world.

1. INTRODUCTION.

This is a portrait of an electron.



It shows not solid rings, not bagels, but wave rings (explanations and details on the following pages), circling with the speed of light, and neighboring rings move in opposite directions. Strict mathematics!

It is this rotation of the constituent rings that creates the total nonzero intrinsic angular momentum-the spin of the electron. In this - the solution to the appearance of spin, which is still a mystery in the conventional science. However, nobody is trying to solve this riddle, but this is a separate issue.

This (approximate) figure shows only the main, nearest rings, there are infinitely many of them. The whole object is a single entity, no part of it can be deleted. And this whole is an elementary particle, an electron. This is not an invention, not a fantasy, not a fit. This, once again, strict mathematics!

Let those who believe that the electron rotates around the nucleus in the hydrogen atom (the simplest case) are not frightened by surprise. No, it does not rotate as a whole around the core. Just the core is inside the electron. About this on the following pages.

Below is an absolutely exact mathematical formula (spherical coordinates), along which this portrait of an electron is drawn. This formula is the solution of the wave equation (one of many). And this solution is simultaneously determined throughout the infinite space.

The energy (mass) of an electron

$$E(q) = 2k^2(L_1 + L_2) \bullet \int_0^q \int_0^\theta \frac{(q\cos q - \sin q)^2}{q^4} \sin\theta d\theta dq$$

q=k•r, k - wave number

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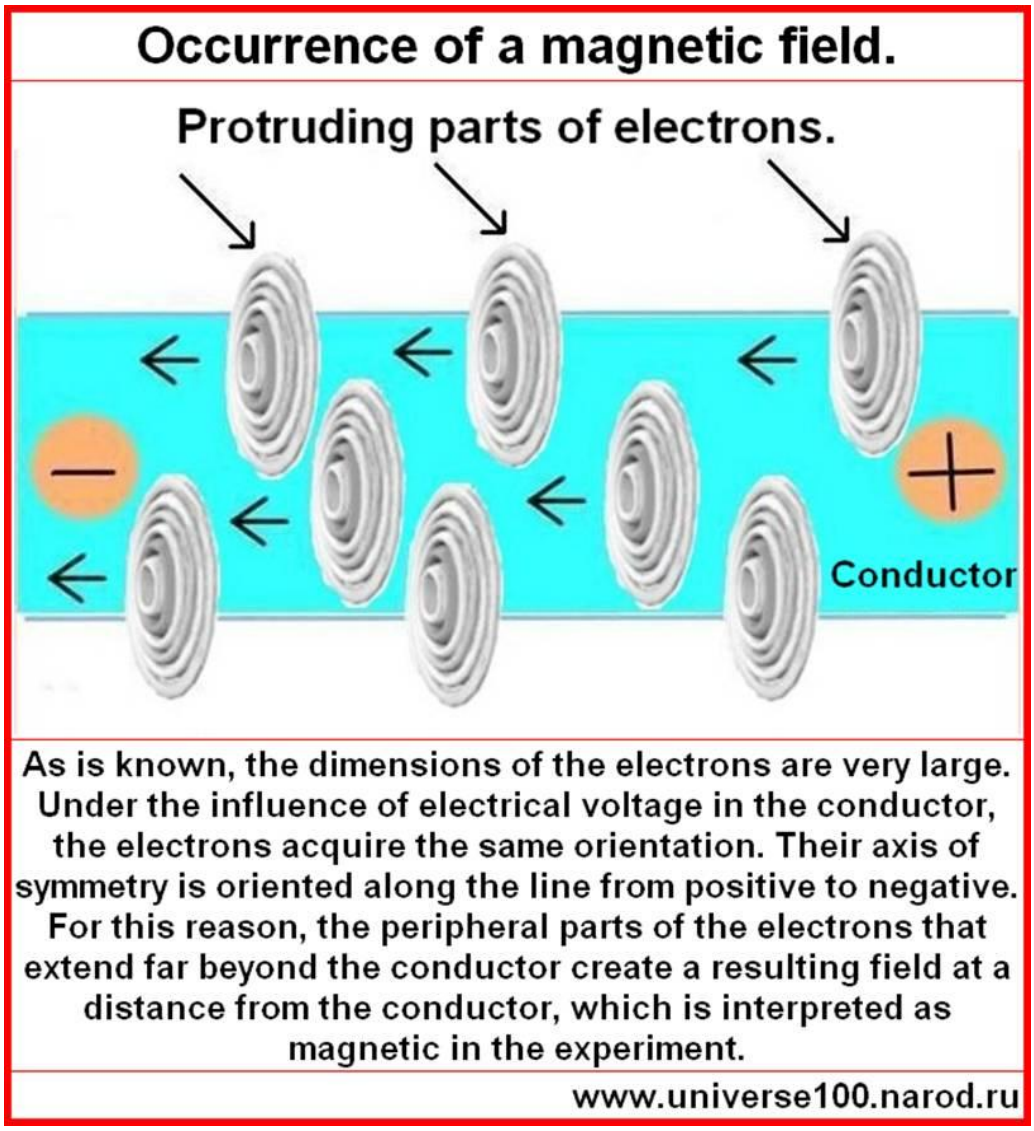
The term "energy" is in the formula, but as is known, in physics, mass and energy are one and the same, up to a multiplier. Here q is the dimensionless length (spherical radius), the explanations below.

In terms of the mass of an electron or its internal energy, only the first 3 to 4 rings (see the figure) are important, which cover 99% of the mass = the electron energy. The remaining rings are negligible. However, there are many electron conductors and the total interaction effect of the peripheral parts of electrons is manifested in the phenomena of electromagnetism. I mean, in the phenomenon of the appearance of an electromagnetic field around a conductor with a current. The electromagnetic field detected by the devices around the conductor with current is nothing but the peripheral parts of the moving electrons themselves. And if there is no current, then the arrangement of the electrons is chaotic and does not create a magnetic field. But when the voltage is connected to the ends of the conductor, the electrons "line up" inside the conductor bagel behind the bagel (see the figure below) and their peripheral parts create noticeable magnetic fields.

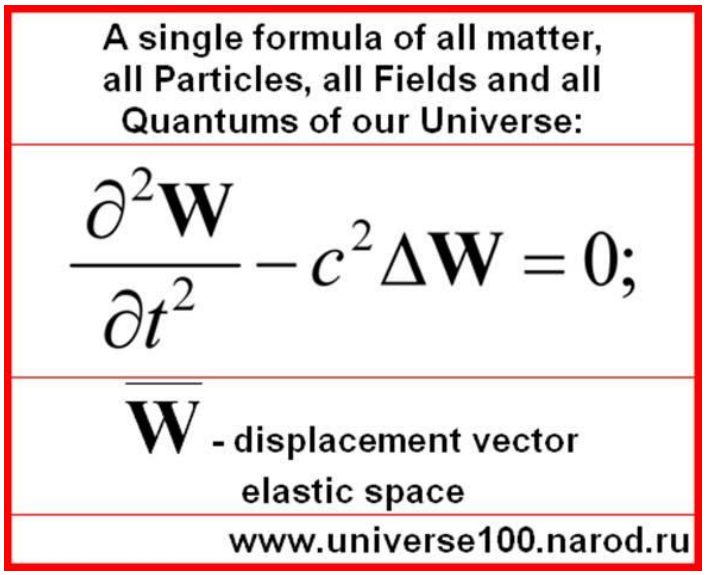


In this unity and integrity of the mathematical solution lies the great strength of the electron. Electrons are able to line up in chains inside metal wires with voltage (current). And they are their peripheral parts - rings, by the serial number, not even by the first-second, not by the thousandth and not by the billion, but by the quintillion ones, 1) they create a magnetic field around the wires; 2) cling (in the literal sense!) To each other in the windings of electric motors and powerfully rotate their rotors, giving traffic to trains, escalators, construction cranes and submarines. That's what internal forces are in the electron!

Further on the site will be given similar portraits (drawings) and exact formulas of the proton and neutron, as well as exact formulas for their SPINS = Moments of Impulse. The following pages of the site also contain formulas for the photon and other particles, but the drawings have not yet been received, there is no time or money. And a convincing and simple proof of the correctness of all our formulas is given.

Uniform Formula of the Universe. Опубликовано: https://www.academia.edu/33884105/The_universe_is_arranged_very_simply, http://viXra.org/abs/1801.0162

And this, just below - the Uniform Formula of the Universe, from which all these formulas and portraits of elementary particles are obtained. This is a single formula that describes all material micro-objects. This is a single formula, from which easily follows Quantum Physics, and the Table of Elementary Particles, and the laws of Electro-Magnetism, and the Unified Theory of All Fields and Matter, and in general all Physics. This is a well-known wave equation:



Here $\mathbf{W}$ is the displacement vector of the elastic space, the details are below. But in motion, in interaction, in relationships, all galactic clusters, all macro and micro objects of the Universe are already described by other, very different mathematical formulas.

Only on the basis of the fact that the Universe is described by the wave equation for an elastic body, we have no right strictly and unequivocally to assert that the Universe is firm and elastic. That's the opposite, it would be possible. That is, if we were sure that the universe is solid and elastic, then it would be described by the wave equation. And in our case, theoretically, the version that the wave equation is satisfied only by a mysterious, fluid and mobile but elastic, and not tearing to pieces Matter that moves in a completely empty Vacuum, is theoretically quite right. Surprises are always possible. Let theoreticians make a guess, does the wave equation arise in some other way and in some other medium with completely unique properties, except in an elastic solid body? Or let them prove that otherwise is impossible, and then we will accurately and unequivocally know that our Universe is firm and elastic. Now it is precisely this task that is relevant, and all sorts of disputes on the topic of SRT, GTR, "primary explosion" and "black holes" are gradually being moved to the "basket."

Next is the beginning of the Elementary Particle Tables. A complete table is never drawn and no one will succeed, since it is infinite. At the CAC LHC or the Dubna accelerator under construction, ILC will receive trajectories of unknown particles, will come up with some names for them, lie for something. And all these unknown particles have long been sitting in this table. This is the destiny of the prophets in their homeland ...

TABLE OF ELEMENTARY PARTICLES.

Two integer parameters. j = 0,1,2,3, ... ∞; m = 0,1,2, ... j. j - line number; m is the column number. The designation of elementary particles: (j, m). We obtained exact formulas giving the distribution of the particle density in space. Formulas for all elementary particles. From these formulas, by specifying, for example, MASSA of a particle, it is possible to calculate its theoretical SIZE or theoretical SPIN.

There are three main and linearly independent parameters of elementary particles: size, mass, torque = spin. The latter depends on the shape of the particle. The weight and empty barrel of identical masses are very different at the moment of rotation, they can differ thousands of times. So it turned out, well, so it turned out, well, Nature is so arranged, the universe is so arranged that when you substitute in these formulas for elementary particles only two of these three quantities, the third can theoretically be calculated. For example, when you substitute the mass of a particle and its torque, you can theoretically calculate its size. The probability that for some random functional series these theoretical dimensions will coincide with the experimental (generally known) is strictly zero. It's like shooting up and that bullet flew back into the trunk. Zero probability. And we have these theoretical dimensions coincided! All three main particles: proton, neutron, electron.

For j = 0, there is only one elementary particle: (0,0). The check shows that this is an electron. 100% coincidence with facts on theoretical SPIN, SIZE and PROPERTIES.

For j = 1, there are two elementary particles: (1,0) is a neutron and (1,1) is a proton. 100% coincidence with the facts on the SPIN, INNER DENSITY DISTRIBUTION and SIZES.

For j = 2 there are three elementary particles: (2,0), (2,1) and (2,2). They have not yet been identified exactly by us, although the formulas of the internal device have been obtained. Apparently these are some kinds of mesons.

For j = 3, there are four types of particles: (3.0), (3.1), (3.2), (3.3). Apparently this is also the continuation of the varieties of mesons.

It is interesting that the total number of known mesons in science (eight, of which one clearly falls out of the series in terms of properties) is approximately equal to the total number of particles predicted by us with j = 2 and j = 3 (seven). But somewhere there is something to be clarified.

And so on, to infinity. Next are short-lived particles, which are identified differently by nuclear physicists. There is some value k in the table. The value of k for each particle is different.

Wave numbers k of loks (j,m)

(elementary particles $\mu_{j,m}$):

$$k_{j,m} = \frac{\mu_{j,m} \bullet c \bullet K^{E}_{j,m}}{\pi \bullet M_{j,m} \bullet K^{M}_{j,m}}$$

$K^{E}_{j,m}$, $K^{M}_{j,m}$ - coefficients obtained after solving equations. Mj,m - angular momentum. k - Wave number. j=0,1,2,3,...; m=0,1,2,...,j;

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All explanations and details are below. Here $\mu_{j,m}$ - mass of the corresponding particle; c - speed of light; $M_{j,m}$ - the angular momentum (spin) of the particle; coefficients $K_{j,m}$ are calculated from the formulas for energy and angular momentum (see the corresponding chapters and the table in the chapter "FORMULA FOR ENERGY OF LOCKS"). No "counterfeit" coefficients!

Table of elementary particles.

j=0,m=0. ELECTRON weight ≈ 0,5 MeV. $E_{(0,0)} = \frac{1}{3}\pi k^2(L_1+L_2)$		It is infinite and expanding on one cell with each line.	
j=1,m=0. NEUTRON weight ≈ 939 MeV. $E_{(1,0)} = \frac{3}{5}\pi k^2(L_1+L_2)$	j=1,m=1. PROTON weight ≈ 938 MeV. $E_{(1,1)} = \frac{7}{30}\pi k^2(L_1+L_2)$		
j=2,m=0. π-MESON. weight ≈ 140 MeV. $E_{(2,0)} = \frac{220}{420}\pi k^2(L_1+L_2)$	j=2,m=1. π-MESON. weight ≈ 140 MeV. $E_{(2,1)} = \frac{46}{420}\pi k^2(L_1+L_2)$	j=2,m=2. π-MESON. weight ≈ 140 MeV. $E_{(2,2)} = \frac{31}{420}\pi k^2(L_1+L_2)$	
j=3,m=0. η-MESON. weight ≈ 550 MeV. $E_{(3,0)} = \frac{322}{630}\pi k^2(L_1+L_2)$	j=3,m=1. K-MESON. weight ≈ 500 MeV. $E_{(3,1)} = \frac{47}{630}\pi k^2(L_1+L_2)$	j=3,m=2. K-MESON. weight ≈ 500 MeV. $E_{(3,2)} = \frac{47}{630}\pi k^2(L_1+L_2)$	j=3,m=3. K-MESON. weight ≈ 500 MeV. $E_{(3,3)} = \frac{47}{630}\pi k^2(L_1+L_2)$

The table is infinite. It looks like a pyramid. It is possible that in lines 3 and 4, the names of the particles should be interchanged, while they are taken at random.

In total there are three types of formulas only in spherical coordinates or what is the same, three classes of localized spherical solutions (see the corresponding chapter) of the wave equation describing elementary particles. There are also solutions in cylindrical coordinates and other solutions of the wave equation are possible.

In the table presented here, all known and not yet known elementary particles described by the second kind of formulas will be inscribed (CLASS 2). In such localized oscillations, energy moves around an axis. For simple solutions with m = 0,j is arbitrary, there is an axial symmetry (electron, neutron). The proton has a slightly broken symmetry.

A photon belongs to the class of elementary particles described by the first kind of formulas (CLASS 1). This also includes neutrinos, if it exists, and other particles that exist only in motion with light or sublight light velocity. It is assumed that there are 3 types of neutrinos. This is our theory most likely to confirm. These three neutrino groups appear similarly to the appearance of groupings of the same type of mesons.

It is quite possible that ball lightning is a representative of the particles described by the third kind of formulas (CLASS 3). In these particles, the energy revolves around an imaginary toroidal core, with entry into it.

The lightning is a representative of solutions in cylindrical coordinates. The existence of the solution is proved. We have not yet studied the details.

An interesting phenomenon has also been discovered: the coincidence of the formulas for the energy distribution of the particles (3.1), (3.2) and (3.3) (see the chapter on the ENERGY of SPECIFIC LOCKS). This means, it is possible, that their masses are close. But it is also known that meson masses K^+, K^- and K^0 are equal, respectively, 494, 494 and 498 MeV. This may be another confirmation of our theory. However, they are already enough.

All this was published 14 years ago, here in Russia. The site is already 12 years old. All this is proved by 100% coincidence with all known experimental data. In fact, Axiomatic Physics is obtained, from which all existing physics follows and there will be a mass of new, theoretically predicted phenomena. In particular, antigravitation is quite possible, we only need to look for experimental clues.

We defeated the problem, but where are the sponsors - patriots for the development and implementation of the theory? Where is the budget line for our work? Where is the support of the state, where is the reaction of the big scientists? Where is all this? We fight like two Malchish - Kibalchish, but where is the Red Army ?!

BUT FIRST THINGS FIRST!

The request further everywhere does not pay attention to the same letters in the integrals: within the limits of integration and in the integration variables. It's an old habit. This does not affect anything, but considerably simplifies the presentation of the number of input variables.

2. The hypothesis of an elastic universe.

© People who in their thoughts
can not go far ahead prefer
to start from afar.

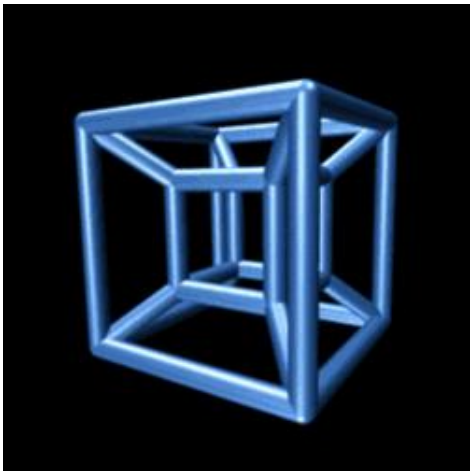
Why is Nature so complicated? Why so many elementary particles, types of interactions, laws, theories and formulas, paradoxes, etc. Why was it so necessary for the Lord to complicate the internal structure of the world?

Let's remember history. How difficult and at the same time helpless and inefficient was the ancient medicine, with its shamans and sorcerers; With its thousands of dried roots, frogs, mice; With her urine of a young pig, etc. A few modern antibiotics replaced all this stuff. Or take physics or astronomy. Was not mechanics difficult before Newton? And then three laws of mechanics decided everything. Did not astronomy with its Ptolemaic geocentric theory exist before Copernicus, Kepler, and again Newton? And then common sense, the correct choice of the frame of reference, the law of gravity and several consequences, describing the trajectories of the planets, explained everything. Or take the chemistry. Is not there always an infinite number of chemical substances and their transformations? How many alchemists spent their lives trying to get gold from different substances. And at the core of everything was a system of Mendeleev elements that do not chemically change into each other. But the very system of

Mendeleev's elements, as it was explained later, is built from even simpler elementary particles, quarks, which are only three pieces (according to modern views). Plus, light photons, neutrinos and more in the universe, there is almost nothing. What the nuclear scientists are proposing today - this supposedly "standard model", these hundreds of supposedly elementary particles, antiparticles, quarks, gluons, etc., is nothing more than a collection of some temporary formations, unstable form and unstable content.

Is not this a general law? The law that at the heart of any, the most complex natural phenomenon or variety, with a reasonable analysis, is a very small number of constituent elements.

As a guideline for describing the device of the Universe, we have taken the postulate that the Universe is arranged simply.



The birth of the hypothesis of an elastic universe.

The hypothesis mentioned by Einstein, and earlier researchers about the **jelly-like universe** is known. By its properties to transmit electromagnetic waves, the cosmic vacuum is close to the elastic body, to the "elastic jelly". So radio waves propagate in a vacuum. However, Einstein, being in captivity of his own worldview, being in captivity of his senses, being in captivity of generally accepted views, rejected the hypothesis about the possibility of a jelly-like universe. He considered it impossible that "the planets pass through the air - jelly without encountering resistance." That is, Einstein could imagine any Vacuum in space, but matter at the atomic level was for him invariably something solid, sharply different from outer space. Empty space and solid atoms - this is the whole essence of his Theory of Relativity. We do not suggest anything else to the senses. The theory of Einstein's Relativity is an extension of our subjective perception of the surrounding world to the category of Science. It's just as ridiculous as if creatures that perceive the world in black and white would find the world truly black and white. But surprisingly, it's just as ridiculous as if creatures that perceive the world as colored would find it really colored. There is no color, length or time in the universe. All this is a means for our perception of reality and tools for orientation in our life and the struggle for existence.

Many modern physicists have applied to the model of elastic vacuum. It is enough to insert into the search engine the phrase "elastic vacuum". But none of them advanced further than empty exercises with matrices and verbal gymnastics. The historians of science will give an overview of these works.

The Reality tells us completely different. It is not known from where and for what reason the wave properties of these solid particles arise; Strange "probabilities of their detection" arise, a strange "principle of uncertainty" arises. All this scientists force us to memorize by heart. And in parallel with this, on the contrary - there are quantum,

discrete properties in such soft, flexible, plastic and continuous electric, magnetic, electromagnetic, intranuclear and other fields. Again invented completely inconceivable "equation" Schrödinger, which is also forced to learn by heart. Where, how it appeared, no one knows. But for some reason, there is a lack of quantum properties in the gravitational field. Well, it is something worse ?! Further, unexpectedly, like snow on the head, a spin is found in the elementary particles. It is unclear for what reason it occurs. Again forced to memorize by heart that the spin is "inalienable," "internal," "purely quantum," and so on. Property of a proton and an electron. Well, learned. But still it is unclear why the spins of the proton and the electron are equal. Given that the mass of the electron is 1845 times (!) Less. Are they made of different materials ?! Can the electron be porous, like a foam plastic? And so doctors and candidates begin to compose, that they say, there is an "electrical" component of matter, and there is a "gravitational" component. And what else? Electrical? And in general, they force students not to ask questions on this topic, but obediently learn what is written in the textbooks.

For history. It was 1973, spring. AI, graduated from the third year of the institute. The field theory has already been passed. Maxwell's equations were studied and the students became acquainted with the way Maxwell's equations are easily transformed into a wave equation identical to the equation of sound propagation in a rail. That is, radio waves, light - it's transverse waves, like a transverse sound in a solid body. So what? Are there not many coincidences? The wave equation arises very often. Rock any pendulum, pull a string, hit the rail - and here it is, the wave equation. And how will the electrons and protons be drawn in such Elastic Cosmos? (This was Einstein's question).

And one day, looking at the mathematical handbook, A.I. noticed that the solution of the wave equation is not just sound. There are also localized solutions of the wave equation. True, these solutions are treated as some stationary "potentials". But A.I. then he realized that it is possible to transform these solutions into dynamic, vortex waves, circling, and here, in the spectrum of these solutions, elementary particles, protons, neutrons, electrons sit. Here sits all quantum physics and in general all physics! Unfortunately, only 23 years later it was possible to return to this idea. On this way, enormous difficulties had to be overcome. But never A.I. Did not doubt that he would return and prove the correctness of his hypothesis of the Elastic Universe.

So, we are putting forward our new statement based on the new author's interpretation of the well-known mathematical solutions of the wave equation. The statement about the possibility of **localized wave formations in an elastic medium**. Not to be confused with solitons, which are vortex motions of SUBSTANCE and do not possess the main fundamental property: the ability to layer itself onto itself (see further) and as a result to a new redistribution of internal energy from the periphery to the center. Different from the formal mathematical solution.

And already from this statement follows a very plausible and proved below hypothesis that **all elementary particles are localized vortex waves in the cosmic "jelly"** through which they (according to Einstein) would have to "wade through". But it will not be difficult for them now. And in general, waves are not to be scoured.

This hypothesis easily describes both elementary particles and ball lightning and even lightning and all kinds of matter, fields and interactions. So, electromagnetic waves under the new hypothesis are simply waves of the type of transverse sound in this ether - jelly. If we take into account the gravitational field as a field of stationary elastic stresses in cosmic jelly, then a single, comprehensive theory of all fields and all elementary particles appears. There are no contradictions with the existing theories, in particular with the theory of relativity of Einstein. Because the very notions of "emptiness" and "solid body" are discarded, which lie both in the basis of the Einstein

model and all the experiments confirming it and interpreting the results of these experiments. Because the choice of a system of concepts and definitions for description simply changes.

The detailed formulation.

This formulation was expounded even when the Elastic Universe was still a hypothesis. Therefore, it may have some disadvantages.

The date of publication of this model should be considered April 1997. It was then that the article with the hypothesis and the main arguments was sent to 30 scientific institutes of the USSR, the RAS, the Russian Academy of Natural Sciences and 10 editions of Russian scientific journals. More than a dozen reviews were received. But, probably the proposed model turned out to be too unusual for perception and has not yet been confirmed. Apparently for this reason, at the stage of the hypothesis (from 1997 to 2003), no scientist and no magazine recognized it as real. As the authors are beginning to understand now, there have been and are many such "alternatives", so no one ever seriously and does not take into account such hypotheses. Also as inventors of perpetual mobile phones, antigrav mobile phones and energy producers from the vacuum. The idea would have been buried for many years if it had not been for the paid scientific publishing house Sputnik Plus, created in 2001.

Now very few people believe that this Ecumenical Continuum is firm and resilient. Although the number of speakers about the universe is very large, nobody understood the essence before us. But now the number of believers and even the understanding gradually increases.

The diverse scientific conjectures about the heaping up of all sorts of "electron-positron pairs" in vacuum, as well as all kinds of "strings" and "branes" - these are unsubstantiated working hypotheses, these are still-born fantasies, this is not true. It's like the way in childhood we assumed that inside the wall radio live little people and they talk and sing. And they play on the strings and drum into the brane. It can be said that it is here, through the "strings" and "branes," that the wave equation is torn to the consciousness of the scientist as a single formula of the universe. But so far it can not break (if we do not take into account our discoveries).

Axiomatic physics is coming! The theory of the Absolute, strictly proved by mathematics, is coming. The theory of the Elastic Universe is coming with absolutely precise formulas for the internal arrangement of elementary particles and a rigorous explanation of all existing physical phenomena and paradoxes.

The universe was arranged quite differently than all the best minds of Mankind had expected until February 2003. And more accurately: one of the hypotheses of the 19th century, which were mentioned at the outset, all rejected and spinned, seemingly hopelessly stupid and ridiculous at first glance, was absolutely correct. This is a hypothesis, mentioned by Einstein, and even earlier researchers, but immediately rejected by all of them. This is the hypothesis of a jelly-like universe. Einstein rejected this hypothesis. However, now, in the light of new ideas about the possibility of localized electromagnetic fields, there is a very plausible hypothesis that all the elementary particles that make up "solid bodies" are oscillations of the jelly itself, through which they would have to "wade through". But it will not be difficult for them now. This hypothesis easily describes both elementary particles and ball lightning and a flash zipper. In the same way as electromagnetic waves under the new hypothesis are simply waves of the type of transverse sound in this ether-jelly. If we take into account the gravitational field as a field of elastic stresses in cosmic jelly, then a single, comprehensive theory of all fields and all elementary particles appears. There are no contradictions with Einstein's model here. Because the very notion of a "solid body" is discarded, which lies both in the basis of the Einstein model, as well as in all the

experiments confirming it, and in interpreting the results of these experiments. Because the choice of concepts and definitions for the description of the universe simply changes.

The enormous speed of light does not allow us to consider the ether as soft, as one might think of the term "jelly-like". Here something is stronger. The authors propose to name the elastic ether as follows: ГУКУУМ. This is kind of like the name of the famous researcher of the elasticity of Hooke. The latter term is similar to the word VACUUM. But invented by the authors because always the vacuum was considered only emptiness. Now it turns out that this is not the case and the element of the gukuum can vibrate, and the gukuum itself can strain and deform, waves can propagate through it and localized oscillations allowed by mathematics exist in it. In essence, the vacuum is a gukuum without any vibrations, stresses and deformations in it. That is, without material objects in our understanding.

We also do not mind that the universal gukuum would be simply called GUK. But we all know that names and nicknames in History are stitched by accident, so they are ready for any turns.

A further exposition is devoted to the deepening and detailing of the hypothesis and the subordination of the philosophical base to it.

Gukuum never arose, and will never disappear, but has always existed and will always exist. Mussable stories about the "primary explosion" - no more than a local episode in a very limited area of the infinite universe. Our relationship with the universe is a relationship with infinity both in time and in space.

Between the infinitesimal particles of the gukuum there is no interaction, except the forces of elastic cohesion. For this reason, he does not face any "gravitational collapse", no compression to the point, in contrast to frequent stellar collapse and subsequent explosions.

In gukuum there is no internal friction, damping, which is indirectly evidenced by the phenomena of superfluidity and superconductivity, as well as huge distances, flying through photons.

Gukuum does not absorb or emit energy, although the question of "zero" internal stress remains open.

If we look more closely, we can understand that the source of the wave equation in gukuum is the conservation law.

Equations of state gukuum are the same as equations of state of an elastic body, and all possible solutions of these equations - really exist in the kinds that people observe.

These are electromagnetic, gravitational and all other fields, and also material particles - protons, neutrons, etc.

Electromagnetic waves are transverse elastic waves in gukuum. If electromagnetic waves do not have a physical explanation and are described only from the standpoint of mathematical formalism, in the model of gukuum electromagnetic waves get a simple physical meaning. It's just a "transverse cosmic sound".

A later remark (!). It can be added to what has been said that the actual electromagnetic waves, spherically propagating in space like waves on water from a fallen stone, most likely do not exist. That is, at the micro-level, electromagnetic waves exist, but they exist only in the form of some spatially localized wave impulses, pellets. These pellets move in space at the speed of light. At the same time, they keep their size and shape. These pellets in the light range are called photons. So they can be called and in all ranges. When there are many photons, they superimpose the effect of a continuous wave. But when they are few and they fly from the abyss of the cosmos, it is possible to register single light photons with an adapted eye. You can register radio-photons or X-ray photons or any other.

The hardness of the gukuum is very high, (or its density is very small), which is why

the speed of propagation of electromagnetic waves in it is very high.

Elementary particles are localized, vortex waves in a gukuum, with a total rotation (spin). The origin of the zero spin will be described later.

The gravitational field is the field of longitudinal stresses. The formation of the gravitational field around the particle is explained by the fact that a standing localized wave limited in a small volume creates a "bubble" effect in a solid that strains the entire environment. Therefore, elementary particles have mass. One can prove that such "bubbles" are always attracted. This clarifies the meaning of the law of universal gravitation.

Recently, another version of the gravitational field appeared. It will be stated later.

Gravitational "curvature" of space, which mathematicians and astronomers note - it is the deformation of the gukuum (or tension in it). True, with the greatest hardness of the gukuum, rather, it is not so much a curvature, but only a presence of elastic strains, wishing to distort it. Perhaps there are no deformations at all, but there is only a stress game! But this is even more intense in the already strong picture of the surrounding surrealism, so it's hardly worth worrying about.

Antimatter. The existence in nature of matter and antimatter is explained by a different configuration of standing vibrations (variants of choice of signs, orientations and constant coefficients in the solution). All interconversion of matter and antimatter is the transition of wave vortices in gukuum from one species to another, including **annihilation** with the release of light quanta. Thus, the mutual transformations of **matter-light-antimatter-again the substance** passes from the category of fantastic abstractions to the category of completely understandable mutual transformations of various types of wave vortices in Gukuum. Antimatter is a state in which a substance is capable of entering into an annihilation reaction and moving from one class of solutions of the wave equation to another class. And despite the fact that such a state of matter - "antimatter" - is quite rare and unlikely, it is easy to understand why antimatter is so small in the universe. In the existing physics, this phenomenon has not yet been explained.

A purely electric and purely magnetic field is nothing more than the continuation of these "particles" themselves. And the imposition of trillions of such microfields. Elementary particles are "smeared out" in space. Recall the Schrödinger equation with its "particle detection probabilities". The electric or magnetic fields created on a macro scale are ordered superimpositions of smeared electrons or protons.

If we consider the stress tensor in an elastic body, then the presumably gravitational field corresponds to the diagonal terms, and to the electric and magnetic ones, some of the others and their combinations. It is necessary to specify only, to whom - what. More precisely, the electric and magnetic fields are already derived quantities from the elements of the stress tensor in Gukuum. These formulas are, they are obtained from comparisons of the **vector potential** theories in electromagnetism and Gukuum theory, based on the wave equation for **displacement** in gukuum. These are absolutely related quantities.

Concerning the dual, particle-wave nature of elementary particles. These particles are near, at short distances and from the inside have wave properties, this is definitely a wave. But in macrophysics, these **localized wave objects** fly, collide and are reflected exclusively as particles, but are absorbed and emitted by quantum laws. This is mathematics, it requires the cross-linking of solutions for the interaction of wave vortices. And it stitches together in a discrete way. It is known that a discrete spectrum of solutions is formed in the wave equation under the imposition of boundary conditions or other additional conditions.

Here, the cause of the fact that the gravitational field is not quantized is immediately clarified (similar statements are found). In the future it will be shown that for the

gravitational field rot **W** = 0 is mandatory (instead of div **W** = 0 for electromagnetism). This leads to a solution with a continuous spectrum, but it is unique and uninteresting. All quantum phenomena inevitably arise, and in a natural way, from the solution of the wave equations and taking into account the boundary conditions.

The fields of elementary particles (which in essence are the particles themselves) are inhomogeneous and oscillatory (with a terribly high frequency), in contrast to the existing classical representations. And only according to statistics Coulomb fields are created. And **single electrons or single protons do not necessarily repel each other**. **It is possible that this depends on the orientation of their spins.** Is it not strange that lightning strings, chains of electrons or ions form when lightning strikes, when they should just scatter one space apart in different directions, since they are so strongly repelled by Coulomb ?! The ability of electrons to align themselves with long chains is also manifested in conductors when voltage is applied to the ends.

Electromagnetic induction - this phenomenon is also physically not explainable within the framework of active physics, although formally follows from Maxwell's equations. It becomes clear within the framework of the Gukuum model. Electric current is a movement of identically oriented electrons. And when the orientation is identical, the peripheral parts of the electrons create a certain nonzero resultant field at a distance from the conductor. This is the magnetic field.

All **Newton's laws** and other laws of classical mechanics and electrodynamics, in general all macro physics - in no way are subject to change in the light of the model of gukuum. The great principle of the **"minimum of the action integral"** or simply the **"principle of action"** of theoretical mechanics, incomprehensible but formidable, now accepted as an axiom, is one of the integral forms that follow from the original wave equation, Hooke's law. This principle also confirms the above hypothesis.

The famous formula of Lord Kelvin E = mc^2 is nothing more than a tautology, since both mass and energy in the new theory are measures of the volumetric energy of deformation (stresses) of the gukuum. They differ only in a constant coefficient c^2, reflecting in what units this energy is measured.

The atom is an inside, a **nucleus** consisting not of a bunch of protons and neutrons (as described and modeled up to now), but, possibly, from interpenetrating localized oscillations of the gukuum, which are very intense, which corresponds to the gravity of protons and neutrons. And around this nucleus and, perhaps, there are oscillations through it, more liquid and smeared around it - these are electronic clouds. If you look at the images of **electronic clouds** that modern chemists paint to explain the different valencies of atoms and look at pictures of known spherical functions, then it's easy to see that these pictures are very similar to each other. This is another confirmation of the proposed model. Similarly, all the wave functions drawn in quantum mechanics for the "detection probabilities" of electrons and other particles are just these electrons and other particles themselves, smeared in space. Although now they are given the meaning of certain "probabilities".

Concerning the **global structure of the universe.** It also perfectly agrees with the theory of the elastic universe. The universe consists, according to publications, of very large bubbles, each one billion light years across, whose walls are made up of millions of stars and galaxies. These bubbles are inflated from the inside by light radiation. Outside of themselves, they create an anti-gravity field (see the next paragraph), which repels the rest of the bubbles. Therefore, such a "foam" does not collapse, but stably exists, with small local "cosmic catastrophes" (like **the Big Bang**).

To designate a new reality, we had to come up with a new word. This word also echoes the **continuum**. The question of the continuum is mutually related to the question of the singularity in fields and particles. This requires a separate study. So far it is known that a proton and a neutron contain cores.

Finally, continuing the theme of **antigravitation**. Knowing how the gravitational field is arranged, it is possible to create in the macroscale (by means of an accurately calculated design of various magnetic windings, capacitors, etc. and current supply) such a "thick" of oscillations that would create (at least in a local space region) a "gravitational field On the contrary. " Those. So that the body placed in this area of space would not be attracted to the Earth, but would be repelled. Thus, in principle, **mobile anti-gravity devices** are possible (along with the previously mentioned cosmic "balloon"), which, quite possibly, will have the appearance of flying saucers held on three or more anti-gravity beams as on legs.

The ball lightning observed in nature is perhaps a sample of other classes of solutions of the wave equation in gukuum.

There is also the assumption that the **earth's magnetic field** is also a ball lightning, of giant dimensions, inside which the Earth is contained. Several circumstances testify to this. In particular, the movement of the magnetic poles. That is, it is possible that such huge fireballs fly freely in space, and sometimes they seem to dress on planets. If the dimensions fit well and the trajectories coincide.

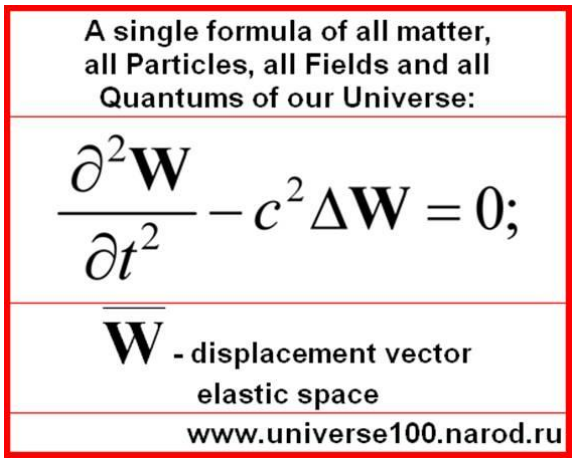
Опубликовано:
https://www.academia.edu/34348365/The_hypothesis_of_an_elastic_universe

http://vixra.org/abs/1801.0163

3. The law of stratification.

An attempt to find formulas for elementary particles.

So, there is a discrete set of solutions to the wave equation, which, according to our hypothesis, creates elementary particles. Let's try to realize the star dream of many scientists: to look into the internal arrangement of elementary particles and ball lightning (this was November or December 2002). It seems to us that this is possible with the volume of knowledge on spherical and cylindrical functions accumulated in mathematical reference books. We start with the scalar quantity, the energy density of the loks (wave vortices). Initial wave equation:



Practically all the physical quantities appearing in the current quantum mechanics and described by the Schrodinger equation satisfy the wave equation. The same can be said about the energy of loks.

A particular solution of the wave equation: spherical standing waves.

$$W_i(r,\theta,\varphi,t) = \frac{C^i_{j,m}}{\sqrt{r}} \bullet J_{j+\frac{1}{2}}(kr) \bullet Y_{j,m}(\theta,\varphi) \bullet \cos(\omega t + \delta)$$

i=1,2,3 (cartesian); j=0,1,2,...; m=0,1,...j; c - speed of light;

ω - frequency; λ - wavelength; $\lambda \cdot \omega = c$; $k = 1/\lambda$;

$C^i_{j,m}$ - constants; $J_{j+1/2}$ - Spherical Bessel function;

$Y_j(\theta,\varphi)$ - spherical surface harmonics;

$$Y_j(\theta,\varphi) = \Phi_m(\varphi) P_j^m(\cos\theta);$$

$$\Phi_m(\varphi) = (const_1 \cos(m\varphi) + const_2 \sin(m\varphi));$$

P^m_j - Adjoint order function m and rank j;

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P^m_j - Adjoint order function m and rank j

$$P_j^m(x) = (1-x^2)^{\frac{m}{2}} \frac{1}{2^j j!} \frac{d^{j+m}}{dx^{j+m}} [(x^2-1)^j]$$

i=1,2,3 (cartesian); j=0,1,2,...; m=0,1,...j;

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What is attractive about this decision? - The fact that it gives a discrete spectrum of functions, and the energy spectrum of elementary particles is also discrete. The fact that the amplitude of spherical harmonics decreases with distance from the center. And the energy spectrum of elementary particles also decreases with distance from the center. The fact that it allows conversion into a vortex wave, creating its own moment of rotation - the prototype of the future spin of elementary particles.

And what else is it attractive? - The fact that it is, implicitly, used in the current quantum physics. Why is it implicit? Perhaps the reasons were the same, which we will indicate below.

As is obvious to everyone, there is a functional connection between the displacement of the W and the density of the lok energy at a given point. More (less) displacement - more (less) energy density at this point. It can be shown that the energy density is described by the same kind of formulas as the above solution for displacement. As in all mechanics, energy is the square of the elastic displacement. $E \sim W^2$. One can also prove that if the integral over the space converges on the energy density of the lok, then

the integral over the space of its displacement at each point multiplied by the volume element also converges. The converse is also true. That is, to estimate the energy of the lok, one can use the solution for the displacement W. So, let us try to integrate over the space the solution obtained for the square of the displacement W^2.

Alas! Alas! Alas! We are faced with an insurmountable barrier. Although the solution itself tends to zero at infinity as well $(1/r)^{3/2}$. But when integrating over space, it does not give a finite value. We can not satisfy this decision.

The search for other solutions to the wave equation does not lead to success. We find ourselves in a broken trough. Such a good idea and such hopelessness. This circumstance pushes back the sweet dream of touching the electron in the distant future. Honest mathematicians close the ink tanks and dry feathers. Sly mathematicians come up with **"quantum operators", the Schrödinger formula,** and continue to work secretly with the same decision. Fortunately, the results obtained, surprisingly enough, are satisfactorily confirmed by experiments. But in parallel there are publications about the **"electrodynamic divergence"** that appears here and there, which has the same nature as our attempt to integrate spherical functions over space.

A detailed analysis of the shape of elementary particles is postponed until better times.

A later note. The best times will come very soon, literally in three months.

The phenomenon of wave stratification.

Let us recall the breakers on the water behind the ship. The wave eddies in the gukuum are similar to such breakers. But how are they different? The fact that the breakers on the water - it's moving around the circle of matter. And wave whirlwinds are vortexes of vibrations in matter, without moving the substance itself in a circle. And what does it give? And this gives something, at first glance, imperceptible. The substance has the property of keeping the volume when moving for any given area of this substance. For example, the allocated volume of water can change its shape while moving, but the volume remains unchanged. This can not be said about the wave in matter. Waves in an elastic body can safely pass through each other, cross each other, overlap. And this is exactly what happens in a vortex wave. The vortex wave runs not along a calm elastic medium, but along an excited elastic medium. The wave runs by itself. The **winding of the wave** occurs. Fantasy? At first glance yes. But further results confirm this fantasy.

The closer to the center, the more intense this winding. The more the energy of the selected volume element is obtained. It can be shown that the energies of the layered oscillations are summed. Here come two intersecting waves of waves. Each has its own energy density and its own energy flow. As these pallets pass through each other, it means that the energy flows do not mix, do not exchange, as they went and go. In the first approximation, the wave excitation proceeds equally along both the unexcited element of the gukuum and also intersecting with any other excitation. From what has been said it follows that at any point of their intersection the energy density in space is equal to the sum of the energy densities of each of the streams.

The same can be said for a wave running in a circle. She runs by herself. That is, the energy of the wave is layered on itself. And the energy of the vortex wave at the point is greater than the formal mathematical solution. How much more? How many times? How can this ratio be estimated? This coefficient can be estimated by comparing the number of revolutions a vortex wave makes per unit of time. For what unit of time to count the number of revolutions of a wave in a lok - this is not essential. Here, only comparison, relative quantity is important. Since the "number of turns" of the wave is inversely proportional to the radius of rotation r, the factor for the energy element simply appears in the formula $\sim (1/r)$**.** At the same time, since the total energy of the lok is constant

and finite, the energy redistribution comes into play. Closer to the center there is an excess over the formal solution. Energy as it contracts to the center of the wave vortex.

In fact, since the wave is layered by itself, all the circular layers are coherent to themselves. Therefore, not the addition of energies, but the addition of oscillation amplitudes (voltages). This is an important point. As a result, the formula for the energy includes the factor not $(1/r)$, but $(1/r)^2$.

And all, do not strain. The original wave equation remains unshakable. Everyone knows the solution - also unshakable. *But you need to calculate the energy correctly!* Behind external simplicity there is a great difficulty, because, all the biggest minds asserted and assert that you can not extract much from the wave equation in the elastic body. Let us recall the quotation from Einstein. The wave equation is linear, all its solutions are also linear. And the universe, as is known, is not linear. However, the phenomenon of stratification just creates a nonlinear universe from linear mathematical solutions.

The law of stratification and the model of an elementary particle.

We give the findings and methods of action to mathematicians, let them tear them apart like a Tuzik rag. There are a lot of discoveries for us. There will be a complete computer simulation of all nuclear processes. There will be hundreds of defended dissertations.

With the help of these principles, some analysis can be made and it is possible that it will give some new connection between the world constants. All this is a matter of the future.

LAW OF SUPPLY. *Elementary particles are formed by waves running around the center around the center. In this case, the purely mathematical solution of the wave equation does not reflect the real energy distribution in the elementary particle. To take into account the real energy density at a given point, a functional factor must be introduced into the solution, which is proportional to the number of wave passes through this point in a fixed time interval.*

Here are the arguments in favor of the fact that the functional factor is equal to $(1/r)^2$.

1) How many times a wave passes through a given point - it does not matter. It is important to compare the number of passes at different points per unit time. The number of passes (at a constant speed of a wave equal to the speed of light) is inversely proportional to the radius of motion. A circling wave (of the elements of the loks) is coherent to itself and as a result only the displacements, the amplitudes of the waves, are summed. Summarizes all (energy, momentum, amplitude of oscillations), which is linear with the solution of the wave equation, linearly with displacement. Of course, as long as the process remains within the framework of Hooke's law. That is, the correction factor for the amplitude of the voltage oscillations in the lok is $(1/r)$**.** Energy in this virtual world is not the main, but the derivative value and is determined by the square of the amplitude. Consequently, the correction factor to the value of the energy density of the lok must be equal to $(1/r)^2$.

2) Finally, it is not yet established why the factor $(1/r)^2$ and not $(1/r)$. This is only confirmed by the complete coincidence of the theoretical results obtained with the experimental results. An attempt to delve into the strictly justified conclusion of this multiplier leads to a philosophical abyss and again to the search for a box containing all the boxes.

3) The fact that the energy of the wave vortex has the ability to contract toward the center leads to the observation that adjacent layers rotating around the axis at distances

r and $r+dr$ rotate with slightly different angular velocities, but they are in direct contact, and thus interact with friend. This means that some tension is created in the relations between these two layers, which leads to a flow of energy closer to the axis of rotation.
4) Here is one more, comic illustration. Imagine a smooth round panel, with a diameter of eleven meters. On this panel, after every 10 cm, very smooth, deep concentric grooves are cut, with a width and depth of about 5 centimeters, ten pieces. In each furrow with the same linear speed, electric machines with a width of 4 cm and a height of 4 cm are launched, only ten pieces. Each machine, it has a scratching (or current-hitting) projection from above, which slightly protrudes above the top edges of the furrows of the panel.

Further. On this structure, on this panel, several big dogs lay in different places (not on one radial line). Say, ten dogs. One lies near the center, on the innermost furrow. The second - on the 2-nd from the center of the furrow. The third is on the third furrow, and so on. The tenth dog crouched on the very extreme, 10th furrow.

Now, even when the machine rolls under the dog, it scratches it with its scratching device over its fur (or beats current) and the dog experiences discomfort or wakes up if she has already fallen asleep.

From rolling each machine under each dog, they all experience the same discomfort. The machine in each furrow is the same, one by one. The linear speed of the machines is the same. Clippers are not braked after every scratch and every turn, they have powerful batteries. That is, for each dog, conditions like the same: the same machines, the same linear speed of machines, and 1 machine per furrow. A complete analogy with localized objects in elastic gukuum.

Does this mean that for a certain period of time all dogs will experience the same total discomfort? Which of the dogs sleep better? Which of the dogs does the wool wear out more? Which of the dogs will the bald patch appear earlier?

Question: By what law will the average discomfort D be distributed in time, depending on the number of the furrow N? Meditation gives such a dependence:

$$D\,(N) \sim 1/N;$$

This is an illustration of the law of stratification. This illustration could be developed by making a definition of the type of "accumulated irritation," which increases according to a quadratic law. But this is next time.

On this argument ends before the connection of solid mathematicians.

In conclusion, we repeat again and again many times: the law of stratification has not been fully and rigorously proved by us - there is no time. The only justification for him is the coincidence of all our further theoretical results with all the experimental data accumulated in physics. As the Americans say, if an animal is like a duck and still swims and quacks, it means that it is a duck.

Опубликовано: https://www.academia.edu/34357857/The_law_of_stratification

http://vixra.org/abs/1801.0197

Обсуждение: https://www.academia.edu/34803901/The_law_of_stratification

4. Concepts and definitions of theory gukuum.

Posted:
https://www.academia.edu/34375199/Concepts_and_definitions_of_the_theory_of_gukuum
http://vixra.org/abs/1801.0232

Not aware of any sources directly formulate hypotheses about the Elastic Universe. Jelly-shaped vacuum, referred to by Einstein - do not count, because there it was only about space without matter, and it was not clear how will "scrape" the material objects in this jelly. The proposed hypothesis is radically different from all existing versions of the device of the universe.

All previous versions necessarily imply an empty space in which moving or hiding anything: from the ether vortices to virtual electron - positron pairs. All previous models every time inevitably end with a list of unanswered questions and paradoxes, referring to the mathematical difficulties in mystery. But model Elastic Universe with Locks as elementary particlesIt gives completely finished result. After reading the present article is to ask largely literally nothing at all is the answer. The only question is: what is Gukuum can be equated to a philosophical search box, which contains in itself all the boxes. The universe was arranged ridiculously simple. You only need to work on, refine, refine. Hundreds of doctoral theses on this subject are waiting for their owners. By developing this gold mine invited all asset geniuses of Russian physicists and mathematicians. It opened the way for the creation of the axiomatic physics.

The objectives are clear, defined objectives, to work, comrades!

The last phase of work, and updated results are available on the court official scientific community.

It is possible that some formulas are not accurate due to the simplifications made. There are assumptions that are not valid. It is possible that not all the factors taken into account. Sometimes attempts refinements lead into philosophical impenetrable jungle.

But on the other weighing pan huge advantages. Such advantages that are sure: it is not just a mathematical model, and the way it really is. The proposed theory Gukuum not contrary to any law of physics and does not create paradoxes. It explains the nature and the diversity of matter. Easily allows all existing paradoxes. And with remarkable clarity simulates the internal structure of elementary particles, all of their properties, and the nature of these properties. In this case, theoretically calculated is absolutely mysterious property of the spin of elementary particles. Established a new link between fundamental constants: the masses of the elementary particles of the Planck constant and the parameters Gukuum. And in the future can be calculated theoretically, and any other parameters of the particles. All this is at the level of precise mathematical formulas.

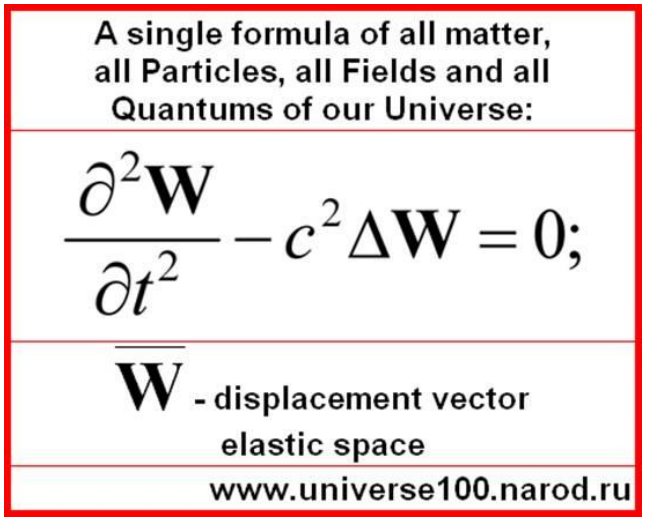
CONCEPTS AND DEFINITIONS.

In previous chapters, consistently developed the idea Elastic Universe. The transition from the bare idea of the mathematical and logical proof of the correctness of the ideas with access to precise formulas. Over time, it opens many new wording clarifies. Here's the latest, improved and revised version of the basic concepts and definitions.

1) Universe is an infinite homogeneous elastic medium. However, it exists not only in itself, but with all allowed in her views of elastic waves. More than anything in the universe does not exist. What? How? Why? - Always has been, is and will be, forever.

2) Definition. This elastic medium is referred to as GUKUUM. It's like "echoing vacuum." And more akin name known researcher Hooke's elasticity. And more in common with the term continuum. Thus the whole universe - is an infinite homogeneous Gukuum. (Translated into English, it is desirable to pay attention to the abbreviation). Unlike the vacuum that has always been considered only emptiness GUKUUM element

can strain and may even be deformed elastically. In contrast to the "physical vacuum" Gukuum likely a continuum or close to that.
3) **The unified formula of the universe.** This is a well-known wave equation:



(1-1)

Here, ***W*** is the displacement vector of the elastic cosmic gukuum element. ***c*** - is the speed of light or the speed of transverse waves, determined by the mechanical parameters of the gukuum. Longitudinal waves are not considered.
4) Different types of solutions of equation (1-1) correspond to different types of oscillatory processes. In particular, a) waves propagating to infinity at the speed of light, b) waves localized, standing, vortex. And so on. And these two kinds are not all solutions. It is not ruled out that certain types of localized solutions can also propagate to infinity at the speed of light. And it is very likely that many waves propagating to infinity have a localized structure. All these kinds of oscillations really exist in the universe, creating a visible variety of material objects.
More later. There is an assumption that all material objects existing in our perception are localized. Including radio waves.
5) **Definition.** One of the solutions of equation (1-1) is a localized wave or **LOK**. This is a vortex-shaped wave object localized in space-the stress fields in Gukuum. The basic solution of the wave equation, which is used in the theory of gukuum to describe localized waves, is the sinusoidal spherical standing waves. In spherical coordinates:

$$x = r \cdot \sin\theta \cdot \cos\varphi, \quad y = r \cdot \sin\theta \cdot \sin\varphi, \quad z = r \cdot \cos\theta \ ;$$

A particular solution of the wave equation, spherical standing waves:

A particular solution of the wave equation: spherical standing waves.

$$W_i(r,\theta,\varphi,t) = \frac{C^i_{j,m}}{\sqrt{r}} \bullet J_{j+\frac{1}{2}}(kr) \bullet Y_{j,m}(\theta,\varphi) \bullet \cos(\omega t + \delta)$$

i=1,2,3 (cartesian); j=0,1,2,...; m=0,1,...j; c - speed of light;

ω - frequency; λ - wavelength; $\lambda \cdot \omega = c$; $k = 1/\lambda$;

$C^i_{j,m}$ - constants; $J_{j+1/2}$ - Spherical Bessel function;

$Y_j(\theta,\varphi)$ - spherical surface harmonics;

$$Y_j(\theta,\varphi) = \Phi_m(\varphi) P_j^m(\cos\theta);$$

$$\Phi_m(\varphi) = (const_1 \cos(m\varphi) + const_2 \sin(m\varphi));$$

P_j^m - Adjoint order function m and rank j;

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(1-2)

It is assumed that the velocity of motion of a perturbation in a localized wave is equal to the velocity of transverse waves or the speed of light.

The energy density corresponding to the solution (1-2) is determined in accordance with Hooke's law and can be estimated from the formula:

$$\rho^1_E \sim \Sigma W_i^2; \quad i=1,2,3 \text{ (Cartesian coordinates);} \qquad (1\text{-}3)$$

The discrete spectrum of the solution (1-2) is determined by integers ***(j, m)*** and each pair of numbers ***(j, m)*** determines its **lok** in the gukuum. This discreteness gives rise to quantum physics.

6) **Analogues** of localized formations exist and are described in the physics of liquids and plasmas, for example, in [08] - [09]. So even more than a century ago on the water, J. Scott Russell observed "solitary waves" in the form of a **hill on the surface** of the water. The physical meaning of this hill is very interesting and consists in the fact that an analogy with the appearance of the gravitational field opens here! Under the external influence (such as explosion and subsequent reflection of the blast wave), a localized **transverse sound wave** appears on the water. It winds around the vertical axis and draws (!) Into itself surrounding water. This forms a hill on the surface of the water.

It is not necessary to connect the formation of such a hill with the movement of the water proper. The movement of water does not participate in the formation of hills. Moreover, with the circular motion of the masses of water, not hills, but pits, funnels, and breakers are formed. But when the transverse sound wave of elasticity rotates around the axis, inside the water, the water contracts to the axis of rotation of the wave and forms a hillock.

It is also known that solitons in a collisionless plasma were studied by RZ Sagdeev in 1956, 1958.

In 1964 Kruskal and Zabuzhsky discovered by numerical modeling that the solution of the Korteweg-De Vries equation (KdV), which is a solitary wave (soliton), has a property that was not known before. Namely, such a solution "elastically" interacts with another similar solution.

In the same books it is reported that the interactions of solitons can be both elastic and forming bound states-quasibrers. And these phenomena are confirmed by

theoretical calculations and examples.

These two ancient results allow us to hope that our Loki will interact elastically with each other and even sometimes form compounds like hydrogen or helium nuclei or complex molecules.

Later. The essence of **Loks** lies in the elastic stress wave in matter, while the substance itself is motionless. This Loks differs from solitons, in which the substance is mobile. Unlike solitons, Loks has the phenomenon of stratification, see the following.

Why do localized entities interact with each other? There is an interesting physical explanation. After all, there is something that turns the wave, according to a mathematical solution. In order for it to become localized, it spun around in a circle. So there is some component of the tensor that turns it ?! And if there is a component of the tensor that acts on the wave, then this component of the tensor can act on another wave! That is, localized entities can interact.

7) **The law of stratification** (February 2003). Solution (1-2) does not directly describe elementary particles. The reason is that this solution with the formal approach (the energy is determined by the square of the displacement) does not give a convergent integral over the energy. The integral diverges at infinity. This fact is known to mathematicians and physicists in similar studies and related problems. Hence the conclusion is drawn: there is a new phenomenon, the effect of stratification or winding. The localized wave is representable as excitation elements running around a certain center, axis, or infinity. The wave elements moving along closed trajectories per unit time run through fixed points different times depending on the distance from the center of the localized wave. Consequently, the elements of the object under study formally identical in energy (by the solution (1-2)), located at different distances from the center of rotation of the wave, will have different real energies. Moreover: they will have generally different properties. So a new concept is born: **lok.**

A confirmation of the existence of the layering effect is the analogy from the mechanics of liquids, which has already been mentioned. Just as localized waves on the water surface have a convex upward shape, the loks have an increased concentration of energy in the center of the lok. In this case, the main solution (1-2), as the final result shows, most likely does not change.

8) **Lok** is in a sense a *virtual object*. It differs from a localized wave as a mathematical solution in the following way. Lok is a stable in form and energy, localized around a certain center or axis, an object that can *move* in space and *interact* with other loks and stress fields in the gukuum. And the effect of stratification greatly influences the properties of the lok when interacting with other loks. This is taken into account in the layering coefficient introduced below.

The **element of lok - is an element of the vibrational energy** at a given point in space, coinciding in coordinates with the element of oscillations of the gukuum at a given point in space. But it differs from the **wave element in the gukuum** by the fact that when the lok moves its elements move, while the elements of the wave in the gukuum have fixed coordinates in the gukuum and can only fade or grow. That is, the vibrational energy as it runs from one element of the gukuum to the other, which are motionless.

Dimensions loks as the size of elementary particles are tied to the elastic-density characteristics of Gukuum.

9) **The correcting functional factor** for the energy is equal to $\boldsymbol{(1/r)^2}$. The most important, decisive argument in favor of such a multiplier is the consequences of such an assumption. This is a complete coincidence of the properties of all loks - theoretical

candidates for a proton, a neutron and an electron with the properties of a real proton, a neutron and an electron. About this in the following articles. An attempt to delve into the strictly justified conclusion of this multiplier leads to a philosophical abyss and again to the search for a box containing all the boxes. But the simplest explanation is the phase addition of waves in the layering.

It is extremely important to distinguish the real picture of oscillations in gukuum from the virtual picture of movement of the elements of the lok, the displacement of the loks entirely, the interaction of the loks.

The mathematical picture of oscillations in gukuum is described by the solution (1-2). This picture is absolute, there are no additional circumstances or clarifications, and nothing can shake this decision. The solution (1-2) has the property that it is "stitched" with itself over angular variables within the specified limits ***(0≤θ≤π)*** and ***(0≤φ≤2π)*** and does not require any "winding" on itself . All real distributions of stresses, deformations, energies, all tensors, gradients and rotors - all this should be determined from equation (1-2). At each point of space, according to the solution (1-2), the amplitude of the oscillations of the gukuum is constant, and the magnitude of the displacement is determined by the single time dependence ***cos (ωt + δ)***.

The energy of the solution, if treated formally according to formula (1-2), would be infinite, if not for the law of stratification. No point of the remote part of the solution (1-2) hinders the motion of the center of this solution. The center of the lok moves, interacting with other loks, and how they relax the "tails", this does not bother anyone. By and large, it is possible that the amplitude of the solutions (1-2) is infinitesimal, and the whole picture of the universe is the motion of infinitesimal quantities. But now it's not about that. Otherwise, you can drown in philosophy.

Moving decisions (1-2) formally do not interact with each other. And they could safely fly through one another as radio waves pass through each other. Although this also requires experimental verification. If there was no interaction between the elements of the corresponding loks. Some day theorists will prove that the determining factor in such an interaction is the phenomenon of stratification.

The real picture of the movement of loks and elements of loks is completely different. The physical and spatial properties of loks (implied: elementary particles), which are recorded in experiments and in the sense organs of a person, are determined by the effect of stratification within the lok itself. Elements of the lok move along closed trajectories, forming a vortex wave. And the smaller the radius of these trajectories, the more turns do the elements of the lok, and consequently the wave per unit of time. This radically affects the experimental results. Lok interactions occur differently than if they were just solutions (1-2). And the physical and spatial properties of loks are also different than they follow from equation (1-2).

How should we investigate the properties of loks and their interactions? It is impossible to invent anything new here, except to take into account the dependence of the number of turns of the lok elements on their distance from the center of the lok. How many times a wave passes through a given point - it does not matter. It is important to compare the number of passes at different points per unit time. The number of passes (at a constant speed of a wave equal to the speed of light) is inversely proportional to the radius of motion. A circling wave (of the elements of the lok) is coherent to itself and as a result only the displacements, the amplitudes of the waves, are summed. Summarizes everything that is linear with the solution (1-2), linearly with displacement. Of course, as long as the process remains within the framework of Hooke's law. That is, the correction factor for the amplitude of the voltage oscillations in the lok is ***(1/r)***. That is, the phase addition of the amplitudes takes place because of the synchronism and coherence of the waves upon their layering. Energy in this virtual world is not the main,

but the derivative value and is determined by the square of the amplitude. Consequently, the correction factor to the value of the energy density of the lok must be equal to $(1/r)^2$.

To this we can add the version that the phenomenon of contraction of the solution to the center is possible. It is difficult to recognize as convincing the assumption that the amplitude of waves is added in the phenomenon of winding. This contradicts our habits of preserving energy. Somehow, the addition of energies is more natural. But this would give a multiplier of only $(1/r)$. But when contracting the solution it is entirely possible that the equilibrium point is reached on the factor $(1/r)^2$.

Let's try to simulate the solution (1-2). Let's say that we become small, make the palm of our hands a ladle, we put a lok on them and examine it from the moment of its formation (by a formal decision), and in a strong slowdown. What do we see?

And we see at the beginning that according to the legend of this solution the lok first rotates as a single whole, with the angular velocity ω. At the "equator" of the lok, any perturbation of Gukuum rotates with a linear velocity: $v = r \cdot \omega$. Consequently, as r increases, the linear velocity of the lok element increases more and more. And at certain distances from the center of the lok, the linear velocity of motion of its elements becomes many times higher than the speed of light. Physically, this is impossible.

What physical picture will we see real, holding the **lok** in the palms, in fact? Let's say that we created a lok by the solution (1-2) and gave it a primary impetus to the rotation. We will observe its evolution. We see that the **angular velocities of the rotation of the lok** elements are different at different distances from its center. That is, ω is variable and depends on r. And maybe not only from him. We see that as r increases, the angular velocity of rotation of the lok is slower, with decreasing r, the angular velocity is increasing. That is, the middle twists, and the edges lag behind. In this process, a certain stress gradient (toward the center or from the center) is created in gukuum, and consequently also some forces that force the loks to move not along circles, but along tightening spirals. Most likely for remote parts - approaching the center. An analogy with spaghetti wrapping on the plug for the outer parts.

In other words, there are internal mechanisms of interaction of these perturbations in the vortex of the Gukuum perturbations that form the lok, which give Lok some desire for greater compactness. Lok begins to pull together to the center. In this case, of course, the solution (1-2) in each of its **harmonics** does not cease to operate, but in the aggregate a certain functional series formed of these solutions begins to act. This series converges to a function that is as yet unknown, which by properties is very close to (1-2). It is close because in practice its action is confirmed. And it was the solution (1-2) that was implicitly used in quantum physics when Bohr calculated the energy levels of an electron in a hydrogen atom. And if we delve deeper into those calculations, then undoubtedly, we can draw out the divergence from the total energy, which we have just overcome with purely physical reasoning. And in part to deprive the meaning of all modern quantum physics. Let us recall publications on this topic, such as "electrodynamic divergence".

We return to today's reasoning.

As a result, instead of formula (1-2) for localized oscillations, formula

$$\rho_E \sim (1/r)^2 \cdot \Sigma W_i^2 ; \quad i=1,2,3; \quad \text{(Cartesian coordinates);}$$

Once again, the main thing. In Gukuum, in cosmic reality, which is not available to a person in his sensations, there are only localized oscillations in the form of a solution (1-2). But loks (and this world feels a person) behave as if they are "wound up" on

themselves and their energy is multiplied by $(1/r)^2$. Hence, the nonlinearity of our world, known to scientists, occurs. The whole observable world can be compared to a computer game. The player presses on the buttons, controls the running and shooting Quakers, watches the beautiful multi-colored graphics. But there is a real world: a colorless waving bundle of electrons inside a kinescope and multi-core current oscillations in the processor. Or from the life of knights: One knight defeats the other, celebrates success. But there is no one to notice the reason for the victory: his stronger and better trained horse.

10) All **physical phenomena**, as shown by the analysis ([22] - [25]), can be explained from the standpoint of the gukuum theory.

All **physical equations** are a consequence of the wave equation (1-1), including the equations of mechanics, electromagnetism, quantum physics, and so on. The appearance of high-order interactions is explained by the action of stratification laws; possibly by engaging layers; as well as not yet described effects.

The **theory of relativity** is translated into the category of approximate theories, built on the assumption of the absence of a distinguished frame of reference. While a fixed and fixed frame still exists: it is a gukuum. If such a system has not yet been found, so because it is bad and not there looking for and not so searched. Perhaps it will not be easy to determine it because of the low density of the gukuum (see below) and the relatively slow velocities of the stars and planets. This is the business of the future. All previously published **theories of the ether** are canceled.

11) In order not to complicate the presentation of the theory of loks, one more term is used everywhere: lok. But it is necessary to distinguish by the context, we are talking about a localized wave or a virtual object, lok.

12) The photon, neutrino and some other particles have not yet been considered as representatives of loks. For them, classes of localized solutions of the wave equation are considered, which have not yet been investigated. Other (short-lived) particles appear to be no more than temporary eddies of stresses in the gukuum. They do not have number like the breakers around the ship.

Additionally:

13) If you think about it, you can, instead of (1-2), compose and solve **the equation for the angular rate of rotation of the excitation in the lok.** There will immediately appear discrete values of angular velocities, just as they appear for energy or displacement. This is a task for the future.

14) Regarding the objects of the universe, which are described by a cylindrical solution, no conclusions are being made, except for the assumption that these are even lightning. The assumption of the existence of "lenticular" objects has not yet been confirmed.

15) Since the possible choice of coordinates is not exhausted by cylindrical and spherical coordinates, in principle, the existence of other solutions and objects and other forms is not excluded.

16) When the current in the circuit breaks around the conductor, clusters of a "high-grade" field are generated by electrons leaving the chaos (sparks, lightning). And, in any experiment, with the weakest current, these electromagnetic clumps of 90% do not fly away anywhere after the current is cut off. These clots are ball lightning. After each click of the switch, in all likelihood, too, a small "ball lightning" is formed! Only its field is very small, weak and does not cause a visible glow in the air molecules passing through it. Therefore, it is not noticeable and not too dangerous. Of course, it still collapses due to interactions with air molecules or surrounding objects and wires. But its hidden influence on the organism is quite possible. In rooms where there are many switches, electrical appliances, wires and electric motors, some unpredictable and yet unexplained effects on the body, glitches and drums are quite possible. Full fantasy:

some people can, in principle, accumulate these invisible fireballs. For example, in the place of work. They can wear this "spoilage" and with their help influence other people. At the same time knows what he thinks of himself. Also, cleaning procedures from them, "removal of spoilage" in principle, are possible.
17) **The process of electrifying bodies in friction** is also becoming clear. Unlike conductors in which electrons freely float, in dielectrics, the electrons are sufficiently rigidly fixed. It is difficult to understand the students of traditional physics. They consider the electron to be a point running along some trajectory. In fact, an electron is a real and very large cloud consisting of petals. And this electronic "flower" is, as it were, cemented by some petals in the dielectric material. The peripheral parts of the electrons protrude far beyond the conductor, forming, as it were, the thorns of the cactus. As a result, when rubbing a piece of cloth "about the cactus," the electrons are "uprooted" from the cactus. This is electrification. But in the existing physics, there is no satisfactory explanation for the phenomenon of electrification. All these stories with a "surface" layer of electrons, according to the authors, are not serious.

Опубликовано:
https://www.academia.edu/34414309/Three_classes_of_localized_spherical_solutions_and_one_class_of_cylindrical_solutions

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5. Sixth grade localized solutions.

Three classes of spherical solution LOCALIZED AND THREE CLASS cylindrical.

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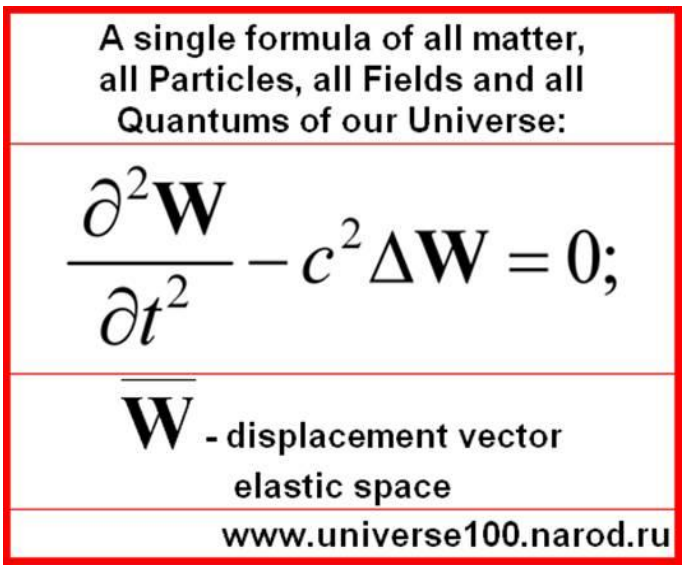
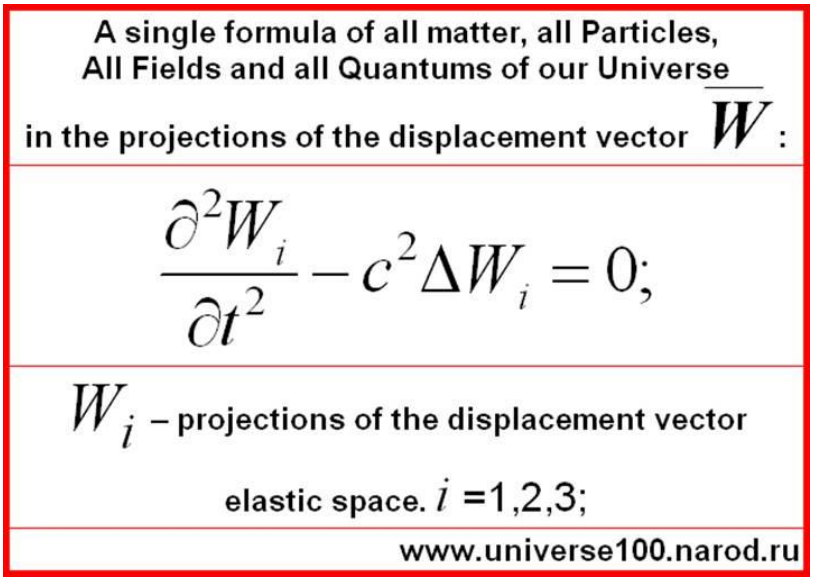
So, again, a single formula of the universe:



(1-1)

Here ***W*** - displacement vector space Gukuum elastic element. c - velocity of light or speed of movement of the transverse waves, defined mechanical parameters Gukuum. Longitudinal waves have not yet considered.

We proceed from the absolutely reliable ([10]) results: the solution of the wave equation for displacement and physical formulas for the elastic body. The same equation (1-1) is expressed in Cartesian coordinates of the projections of the displacement vector ***W*** :



(1-1)

VARIOUS TYPES SOLUTIONS equation (1-1) correspond to different kinds of oscillatory processes. In particular, a) wave propagating infinite speed of light, and b) waves localized stand, swirls. And all of these kinds of solutions are not exhausted. It is very likely that some types of localized solutions can also be extended to infinity with the speed of light. And it is very likely that many extending into infinity waves have localized structure. All these types of vibrations do exist in the universe, creating the appearance of the variety of material objects.

Later. There is an assumption that all material objects that exist in our perception are localized. Including radio waves.

DETERMINATION. One of the solutions of the equation (1-1) is localized waves. This localized in space vortex-wave object - the stress field in Gukuume. The main solution

of the wave equation, which is used in Gukuum theory to describe the localized wave is sinusoidal spherical standing waves.

We are working in spherical coordinates:

x = r • sin θ • cos φ , y = r • sin θ • sin φ, z = r • cos φ ;

A particular solution of the wave equation, spherical standing waves:

A particular solution of the wave equation: spherical standing waves.

$$W_i(r,\theta,\varphi,t) = \frac{C^i_{j,m}}{\sqrt{r}} \bullet J_{j+\frac{1}{2}}(kr) \bullet Y_{j,m}(\theta,\varphi) \bullet \cos(\omega t + \delta)$$

i=1,2,3 (Cartesian) ; j =0,1,2,...; m=0,1,...j; c - Speed of light ;

ω - frequency ; λ - wavelength ; $\lambda \bullet \omega = c$; $k = 1/\lambda$;

$C^i_{j,m}$ - constants ; $J_{j+1/2}$ - Spherical Bessel function ;

$Y_j(\theta,\varphi)$ - spherical surface harmonics ;

$Y_j(\theta,\varphi) = \Phi_m(\varphi) \bullet P_j^m(\cos\theta)$;

$\Phi_m(\varphi) = (const_1 \cos(m\varphi) + const_2 \sin(m\varphi))$;

P_j^m - An associated function of order m and rank j ;

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(1-2)

Where ***J*** $_{j+1/2}$ - spherical Bessel function (a) or, equivalently, the cylindrical Bessel function of the first kind:

$J_{j+1/2}$ - spherical Bessel function or,

what is the same, cylindrical
Bessel function of the first kind .

$$J_{j+\frac{1}{2}}(z) = \sqrt{\frac{2}{\pi}} \bullet z^{j+\frac{1}{2}} \left(-\frac{1}{z}\frac{d}{dz}\right)^j \left(\frac{\sin z}{z}\right)$$

j=0,1,2,...;

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$Y_j(\theta, \varphi)$ - surface spherical harmonics;

$Y_j(\theta, \varphi) = P_m(\varphi) P_j^m(\cos\theta)$; $Y_j(\theta, \varphi) = P_j^m(\cos\theta) F_m(\varphi) = P_j^m(\cos\theta)(a_m \cos m\varphi + b_m \sin m\varphi)$;

P_j^m - 1 associated Legendre function type of order m
and rank j :

P^m_j - Adjoint order function m and rank j

$$P_j^m(x) = (1-x^2)^{\frac{m}{2}} \frac{1}{2^j\, j!} \frac{d^{j+m}}{dx^{j+m}}[(x^2-1)^j]$$

i=1,2,3 (cartesian); j=0,1,2,...; m=0,1,...,j;

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(1-3)

F $_m$ (φ) = (const $_1$ • cosm φ + const $_2$ • sinm φ);

Further, in the formulas repeatedly occurs value ***k*** , is given in Figures decoding ***k = 1 / λ*** . On the following pages we will show that this value is different for different particles and is equal to:

Wave numbers k of loks (j,m)

(elementary particles $\mu_{j,m}$):

$$k_{j,m} = \frac{\mu_{j,m} \bullet c \bullet K^E_{j,m}}{\pi \bullet M_{j,m} \bullet K^M_{j,m}}$$

$K^E_{j,m}$, $K^M_{j,m}$ - coefficients obtained after solving equations. Mj,m - angular momentum. k - Wave number. j=0,1,2,3,...; m=0,1,2,...,j;

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It assumes that velocity in a localized disturbance wave is the velocity of transverse waves or the speed of light.

In localized vibrations corresponding to the solution (1-2) At first glance there is not only circular, there is generally no energy transfer. This is true stand, jarring vibrations in one place. But here's what the situation really is. **CLASS 1.** allegedly localized "radiation sources" (traditional). The simplest case: ***j*** = 0. Since the equation (1-2) is linear, any linear combination of the solutions (1-2) will be the solution, too (1-1). From (1-2), given that ***j*** = 0, ± 1, ± 2, ... It is possible to construct a linear combination of solutions:

$$W_{0,0}(r,\theta,\varphi,t)=\sqrt{\frac{2k}{\pi}}\bullet\{\frac{\sin kr}{kr}\bullet\cos(\omega t)-\frac{\cos kr}{kr}\bullet\sin(\omega t)\}$$

k - Wave number. i=1,2,3 (cartesian);

$\omega=c\bullet k$; c - Speed of light.

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(1-4)

Where obtained for ***j*** = 0 is such a localized spherical wave (!):

For $j=0$ it turns out this
localized (!) spherical wave:

$$W_{0,0}(r,\theta,\varphi,t)=\sqrt{\frac{2k}{\pi}}\bullet\frac{\sin(kr-\omega t)}{kr}$$

k - Wave number. i=1,2,3 (cartesian);

$\omega=c\bullet k$; c - Speed of light.

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(1-5)

It's hard not to find out the solution of the radiation of a point source. Physicists know that the flow of energy there! Here's a mathematical trick.

A similar linear combination for ***j*** = 1 is obtained as is known in physics dipole radiation:

For $j=1$ it turns out the known
In physics, the radiation of a dipole:

$$W_i(r,\theta,\varphi,t)=A\bullet\left[\frac{1}{kr^2}\bullet\cos(\omega t-kr)-\right.$$
$$\left.-\frac{1}{r}\bullet\sin(\omega t-kr)\right]\bullet\cos\theta$$

k - Wave number. i=1,2,3 (cartesian);

j,m - integer; A - Arbitrary;

$\omega=c\bullet k$; c - Speed of light.

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And such combinations, probably a lot. For other ***j*** convert more bulky, and probably will turn multilobal waves. Which objects correspond to the data wave - is a separate

issue. **As will be shown below, this class of solutions actually defines localized wave objects moving at the speed of light. Specifically: photons and a neutrino. And the other, not yet known to science education, moving at the speed of light.**

The general formula for objects moving at the speed of light (photons, neutrinos, and others):

The displacement formula for objects moving with speed of light (photons, neutrinos, etc.):

$$W_i(r,\theta,\varphi,t) = \frac{C^i_{j,m}}{\sqrt{r}} \bullet J_{j+\frac{1}{2}}(kr \pm \omega t) \bullet Y_{j,m}(\theta,\varphi)$$

k - Wave number. i=1,2,3 (cartesian); j,m - 0,1,2,...;

$C_{j,m}$ - Arbitrary; $\omega = c \bullet k$; c - Speed of light.

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(1-6)

However, a preliminary check shows that formalenergy integral of this formula does not converge. But as we have seen, it just can not be formally integrated. Be sure to somewhere will be "winding", which must be taken into account. It may be necessary to carry out this test better. It can be applied the following argument. The fact that photons - they are here they are formed before our eyes in real time and in large quantities. Therefore, at the moment of their shape is very far from the above described formula. They further in the course of the flight gradually relax to normal form and all this is happening with the speed of light. That is, a photon is already in the process of gradually grows this flight "as the integral diverging tail." This tail, despite the fundamental infinity of his power in an infinite time, for any finite time it is still not too great a percentage of the photon energy of the center. But they are at all times remain with the ultimate flight, originally given energy. By the way, is not this the cause of the cosmic phenomenon of "red-shift" ?!

CLASS 2 can focus not attempt to apply to the above-described variable ***r*** , as a variable ***φ*** . For example, a solution of (1-1) may be the following linear combination of the solutions (1-2):

$$W(r,\theta,\varphi,t) = \frac{C_j}{\sqrt{r}} \bullet J_{j+\frac{1}{2}}(kr) \bullet P^m_j(\cos\theta) \bullet$$

$$\bullet [\sin m\varphi \bullet \cos(\omega t) - \cos m\varphi \bullet \sin(\omega t)]$$

k - Wave number. i=1,2,3 (cartesian);

j,m - integer; C_j - Arbitrary;

$\omega = c \bullet k$; c - Speed of light.

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(1-7)

or after obvious transformation:

Solenoidal solutions. In such a wave all energy moves around the axis.
This class of solutions defines elementary particles:
a proton, a neutron, an electron, mesons, etc.

$$W(r,\theta,\varphi,t)=\frac{C_j}{\sqrt{r}}\bullet J_{j+\frac{1}{2}}(kr)\bullet P_j^m(\cos\theta)\bullet \bullet\sin(m\varphi-\omega t)$$

k - Wave number. i=1,2,3 (cartesian); j,m - integer;
C_j - Arbitrary; $\omega=c\bullet k$; c - Speed of light.

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(1-8)

And this is not a point light source, and running in circles outrage.

Even at ***m*** = 0 the energy is still moving. The thing is that he gukuum does not move, it vibrates on the spot. Like wiggling in place a chain of people on fire, transmitting a bucket of water to each other. But the energy of the vibration is moved, as with water buckets. Sometimes two counterpropagating energy flux create the appearance of neutralizing each other, and then the solution obtained (1-2). We say that the solution (1-8) **solenoidal** . In these localized oscillations energy moves around an axis. For simple solutions with ***m*** = 0, there is also axial symmetry.

As will be shown below, this class of solutions actually defines the "inactive" localized wave objects. Specifically: all known elementary particles, proton, neutron, electron, mesons and so on. And the other, not yet known in the science of elementary particles.

Class 3. But the focus does not end there. The variable ***θ*** is worse? There associated functions (see the solution of (1-2), (1-3).) Which can be represented as products:

$$P_{j,m}=P^{*}_{j,m}\cdot\sin\theta \text{ ; and } P_{j,m}=P^{**}_{j,m}\cdot\cos\theta \text{ ;} \qquad (1\text{-}9)$$

eg,

$$P_{2.1}=-3\sin\theta\cos\theta \text{ ; } P^{*}_{2,1}=-3\cos \text{ ; } P^{**}_{2,1}=-3\sin? \text{ ;}$$

Such solutions can be applied as described above focus, not only to the variable ***φ*** , and to the variable ***θ*** . There does not aim to complete the study of all possible solutions of the wave equation. But experience suggests: and the variable ***θ*** is also possible to carry out a similar linear combination of the solutions (1-2) and get something like:

Toroidal solutions of the wave equation:

$$W(r,\theta,\varphi,t)=\frac{C_j}{\sqrt{r}}\bullet J_{j+\frac{1}{2}}(kr)\bullet$$

$$\bullet\,(P^*_{j,m}-Q^*_{j,m})\bullet\sin(m\varphi)\bullet\sin(m\theta-\omega t)$$

k - Wave number ; j=0,1,2,...; m=0,1,...,j;

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(1-10)

In such facilities energy not twisted around the axis, and around an imaginary toroidal core, with stops inward. We call such localized oscillations **toroidal** . Their study is also a separate issue. It seems that in toroidal coordinates, it will be easier, more beautiful and will not be singularities.

I remember a fireball. Here's her field (not purely electromagnetic!), Rolled up with lightning (this process is supposed to contact the formation of ball lightning, see. Below) as the fingertip to fingertip (or Lermontov as naperstnik debauchery) just is toroidal.

So, here is a hypothetical formula of ball lightning (of course, in spherical coordinates):

Hypothetical formula for objects like spherical Lightning (in spherical coordinates):

$$W(r,\theta,\varphi,t)=\frac{C_j}{\sqrt{r}}\bullet J_{j+\frac{1}{2}}(kr)\bullet$$

$$\bullet\,(P^*_{j,m}-Q^*_{j,m})\bullet\sin(m\varphi)\bullet\sin(m\theta-\omega t)$$

Here $\overline{W}$ – displacement vector of the elastic element space gukuum.

k - Wave number. i=1,2,3 (cartesian);

j,m - integer; C_j - Arbitrary;

$\omega=c\bullet k$; c - Speed of light.

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(1-11)

CLASS 4 (optional). A similar situation with beaded lightning. Only when the field is not sinking, but left after the slow extinction of lightning. It turns a solenoidal field, only in cylindrical coordinates. So mathematical trick receives a practical embodiment. We are sure that such mathematical tricks will be a lot.

We work in cylindrical coordinates:

x = ρ · cos j, y = ρ · sin j , z = z ;

The basic solution with physical sense, is as follows:

The hypothetical formula for objects of the type lightning (in cylindrical coordinates):

$$W_i(\rho,z,\varphi,t) = c_i e^{\mu i k z} \bullet Z_m(\rho\sqrt{k^2+K^2}) \bullet$$
$$\bullet (a\cos m\varphi + b\sin m\varphi) \bullet \cos(\omega t + \gamma)$$

This solution should be mathematically a kind of endless garland of sausages along the Z axis.

Here $\overline{W}$ – displacement vector of the elastic element space gukuum. i=1,2,3 (cartesian); m - integer;

$$c_i,\ \gamma,\ k,\ K$$ **- arbitrary;**

$\omega = c \bullet k$; c **- Speed of light.** Z **- Arbitrary**

Cylindrical Bessel functions of the first kind. These are sinusoidal cylindrical waves.

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(1-12)

Here, ***i*** = *1,2,3* (Cartesian); ***m*** - an integer; ***c m , gamma , the k , the K*** - arbitrary; ***w = c / λ*** ; ***c*** - the speed of light. ***The Z*** - arbitrary cylindrical Bessel function, but continuous solution give only Bessel function. It - sinusoidal cylindrical waves. This solution mathematically should be a similarity endless garland sausages along the axis **Z**

. And if it is physically feasible, it is very likely that this facility will Chotochnoy lightning. Some analysis of this decision is made, it is not presented here. Energy integrals converge (in terms of a sausage). But his presentation we postpone for the future.
In addition, over the cylindrical solution can certainly carry out work as over spherical. That is similar to the ones found three types of solutions, and corresponding objects, which generates a solution of the wave equation in cylindrical coordinates. In the cylindrical decision variables may be used *(z ± ω t) and (± ρ ω t):*

Гипотетическая формула объектов движущихся вдоль оси Z:
(в цилиндрических координатах):

$$W(\rho,z,\varphi,t) = ce^{\mu ik(z\pm\omega t)} \bullet Z_m(\rho\sqrt{k^2+K^2}) \bullet (a\cos m\varphi + b\sin m\varphi)$$

Это - синусоидальные волны, бегущие вдоль оси Z.

Здесь $\overline{W}$ – вектор смещения элемента упругого космического гукуума. i=1,2,3 (декартовы);
m - целочисленное; c_i, γ, k, K - произвольные; $\omega = c \bullet k$; c - скорость света.
Z_m - произвольные цилиндрические функции Бесселя первого рода.

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And

Гипотетическая формула цилиндрических волн, расходящихся от оси Z:
(в цилиндрических координатах):

$$W(\rho,z,\varphi,t) = ce^{\mu ikz} \bullet Z_m[(\rho \pm \omega t)\sqrt{k^2+K^2}] \bullet (a\cos m\varphi + b\sin m\varphi)$$

Это - угасающие цилиндрические волны, уходящие от оси Z.

Здесь $\overline{W}$ – вектор смещения элемента упругого космического гукуума. i=1,2,3 (декартовы);
m - целочисленное; c_i, γ, k, K - произвольные; $\omega = c \bullet k$; c - скорость света.
Z_m - произвольные цилиндрические функции Бесселя первого рода.

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What is the physical meaning of the formula, while we do not guess. Where is the photons, where the neutrino, where radio waves, where other objects moving at the speed of light. This is something for the future.

6. Formula for the total energy in the lok.

Abstract. A theoretical calculation is made of the total energy of the wave vortex in a vacuum, for the general case.

The formula is derived in accordance with the laws of mechanics for a solid. It is more convenient to deploy the lok so that all the oscillations occur parallel to the vertical axis Z, and the rotation of waves around this axis. Such a choice is denoted as W_0.

$$W_x = W_y = 0\ ;$$

$$W_z = W_0 = \frac{C_{j,m}}{\sqrt{r}} \bullet J_{j+\frac{1}{2}}(kr) \bullet Y_{j,m}(\theta,\varphi) \bullet \cos(\omega t + \delta)$$

i=1,2,3 (Cartesian); j=0,1,2,...; m=0,1,...j; c - Speed of light;

$C^i_{j,m}$ - constants; ω - frequency; λ - wavelength; $\lambda \bullet \omega = c$;

$k = 1/\lambda$ - Wave number.

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(1-11)

Further, for simplicity, the constant C_j, m and the time dependence are not considered, because in the process of voltage oscillations in the fixed-locus element the sum of the kinetic and potential energy does not change and is determined by the point at which $\cos(\omega t + \delta) = 1$.

Action plan is standard.

A) The strain tensor is first expressed through the solution (1-11).

B) Then the energy density of one coil (!) of a localized wave is also via the solution (1-11).

C) Then the layering factor is taken into account and the real energy density in the lok is obtained.

D) The energy density is integrated over the space with allowance for the layering law and the total energy of the lok is found.

Transformations between cartesian and spherical coordinates are used.

Standard conversions between Cartesian and spherical coordinates:

$$W_r = W_x \sin\theta \cos\varphi + W_y \sin\theta \sin\varphi + W_z \cos\theta\ ;$$

$$W_\theta = W_x \cos\theta \cos\varphi + W_y \cos\theta \sin\varphi - W_z \sin\theta\ ;$$

$$W_\varphi = -W_x \sin\varphi + W_y \cos\varphi\ ;$$

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(1-12)

Where W_x , W_y , W_z are three components of the solution (1-2). Or with the choice of (1-11):

The expression for the displacement in the lok located vertically in spherical coordinates:

$$W_r = W_0 \cos\theta \;;$$

$$W_\theta = -\, W_0 \sin\theta \;;$$

$$W_\varphi = 0 \;;$$

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(1-13)

Next, we need the strain tensor in the lok.

The tensor of deformations in the lock:

$$W_{ik} = \frac{1}{2}\left(\frac{\partial W_i}{\partial x_k} + \frac{\partial W_k}{\partial x_i}\right)$$

$i,k = 1,2,3;$

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(1-14)

The strain tensor in spherical coordinates:

The tensor of deformations in a lok in spherical coordinates:

$$2W_{\varphi\theta} = \frac{1}{r\sin\theta}\frac{\partial W_\theta}{\partial\varphi} + \frac{1}{r}\frac{\partial W_\varphi}{\partial\theta} - \frac{1}{r}W_\varphi ctg\theta \qquad W_{rr} = \frac{\partial W_r}{\partial r}$$

$$2W_{r\theta} = \frac{1}{r}\frac{\partial W_r}{\partial\theta} + \frac{\partial W_\theta}{\partial r} - \frac{W_\theta}{r} \qquad W_{\varphi\varphi} = \frac{1}{r\sin\theta}\frac{\partial W_\varphi}{\partial\varphi} + \frac{W_\theta}{r}ctg\theta + \frac{W_r}{r}$$

$$2W_{r\varphi} = \frac{\partial W_\varphi}{\partial r} - \frac{W_\varphi}{r} + \frac{1}{r\sin\theta}\frac{\partial W_r}{\partial\varphi} \qquad W_{\theta\theta} = \frac{1}{r}\frac{\partial W_\theta}{\partial\theta} + \frac{W_r}{r}$$

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(1-15)

Definitions are introduced:

1) ρ^{1}_{E} - the energy density of one turn of a localized wave.

2) ρ_{E} - The real energy density of a localized wave, taking into account "winding".

3) E - the total energy of the lok obtained by integrating the energy density over space with allowance for "winding".

For the energy density in the lok, the following relation (from Hooke's law) holds:

Density of energy in Lok:

$$\rho^{1}_{E} = \frac{L_1}{2}\sum W_{ii}^{\ 2} + L_2 \sum W_{ik}^{\ 2}$$

i,k = 1,2,3;

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(1-16)

Where L_1 and L_2 - Lame Gukuum coefficients (elasticity characteristics); i,k = 1,2,3 - indices of variables.

Volume element in spherical coordinates:

$$dv = r^2 \bullet sin\theta \bullet dr \bullet d\theta \bullet d\varphi \; ; \qquad (1\text{-}17)$$

The total energy is the integral over the entire space:

The total energy of the lok:

$$E = \iiint \rho_E dv = \iiint \Phi \bullet \{\frac{L_1}{2}\sum W_{ii}^{\ 2} + L_2 \sum W_{ik}^{\ 2}\} r^2 \sin\theta dr d\theta d\varphi$$

i,k = 1,2,3;

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(1-18)

Where Φ - The functional factor, which takes into account the "stratification" of the solution. It is taken equal $(1/r)^2$. It is more convenient to proceed to a dimensionless variable.

Please note that this is where the dimensionless coordinate appears q ! :

$$q = k \bullet r \; ; \qquad (1\text{-}19)$$

The total energy of the lok after the transformations:

The total energy of a lok with a dimensionless radial coordinate $q=k \bullet r$:

$$E = \frac{1}{k} \iiint \{ \frac{L_1}{2} \sum W_{ii}{}^2 (\frac{q}{k}, \theta, \varphi) + L_2 \sum W_{ik}{}^2 (\frac{q}{k}, \theta, \varphi) \} \sin\theta dq d\theta d\varphi$$

i,k = 1,2,3 (Cartesian); j=0,1,2,...; m=0,1,...,j;

c - Speed of light; ω - frequency; λ - wavelength;

$\lambda \bullet \omega = c$; $k = 1/\lambda$; - Wave number.

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(1-20)

Calculation of this formula is the most laborious place, if you work manually. The results are achieved using computer programs. A huge thanks to their developers.

We expand the expression for the integral of the total energy (1-20):

The integral of the total energy in the expanded form:

$$E^{полная} = \iiint \Phi \bullet \{ \frac{L_1}{2} \sum W_{ii}{}^2 + L_2 \sum W_{ik}{}^2 \} r^2 \sin\theta d\varphi d\theta dr =$$

$$= \int_0^{\infty} \int_0^{\pi} \int_0^{2\pi} \frac{L_1}{2r^2} \{ \frac{\partial W_r}{\partial r} \}^2 r^2 \sin\theta d\varphi d\theta dr +$$

$$+ \int_0^{\infty} \int_0^{\pi} \int_0^{2\pi} \frac{L_1}{2r^2} \{ \frac{1}{r} \frac{\partial W_\theta}{\partial \theta} + \frac{W_r}{r} \}^2 r^2 \sin\theta d\varphi d\theta dr +$$

$$+ \int_0^{\infty} \int_0^{\pi} \int_0^{2\pi} \frac{L_1}{2r^2} \{ \frac{1}{r \sin\theta} \frac{\partial W_\varphi}{\partial \varphi} + \frac{W_\theta}{r} ctg\theta + \frac{W_r}{r} \}^2 r^2 \sin\theta d\varphi d\theta dr +$$

$$+ \int_0^{\infty} \int_0^{\pi} \int_0^{2\pi} \frac{L_2}{4r^2} \{ \frac{1}{r} \frac{\partial W_r}{\partial \theta} + \frac{\partial W_\theta}{\partial r} - \frac{W_\theta}{r} \}^2 r^2 \sin\theta d\varphi d\theta dr +$$

$$+ \int_0^{\infty} \int_0^{\pi} \int_0^{2\pi} \frac{L_2}{4r^2} \{ \frac{\partial W_\varphi}{\partial r} - \frac{W_\varphi}{r} + \frac{1}{r \sin\theta} \frac{\partial W_r}{\partial \varphi} \} r^2 \sin\theta d\varphi d\theta dr +$$

$$+ \int_0^{\infty} \int_0^{\pi} \int_0^{2\pi} \frac{L_2}{4r^2} \{ \frac{1}{r \sin\theta} \frac{\partial W_\varphi}{\partial \varphi} + \frac{W_\theta}{r} ctg\theta + \frac{W_r}{r} \}^2 r^2 \sin\theta d\varphi d\theta dr$$

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(1-21*)

The sign * is entered here so that there are no coincidences with subsequent chapters.

Next we sequentially set the values j = 1,2,3,… m = 0,1,…,j . Then, according to equation (1-11), we choose W_0 . After this, using the formula (1-13), we find the values of the quantities W_r , W_θ , W_φ . After that, we substitute these values into the integral expression (1-21 *) and calculate these integrals.

For such formulas it is possible to compile a computer algorithm. For each pair (j,m) their numerical coefficients in (1-21 *) will be obtained. Within a few days, we managed to calculate a certain array of integrals on the computer. And these results deserve attention. It turned out that in all tested combinations of integer parameters the total energy of the lok depends only on the sum of the Lamé elasticity characteristics for Gukuum L_1 и L_2 . Change only ahead of the standing coefficients.

Table of energy levels.

There is a serious assumption that this is the table of all particles of the universe. In each cell it is necessary to set the values of the analogous coefficient for the angular momentum, the wave number k , as well as the effective particle size D .

It turned out that in all loks - combinations of integer parameters (j,m) the total energy of the lok depends only on four parameters: the numbers themselves (j,m), sum of Lame's elasticity characteristics for Gukuum (L_1+L_2) and wavenumber k . It turned out that the moment of the lok impulse is also expressed only through these parameters. These are the formulas:

The energy of lok (j,m).

The energy of the lok $(j,\ m)$ in the general case:

$$E_{j,m} = K^{E}_{j,m} \bullet \pi k^2 \bullet (L_1 + L_2)$$

$K^{E}_{j,m}$ - Coefficient obtained
After solving the equations.

k - Wave number. j=0,1,2,3,...; m=0,1,2,...,j;

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(1-36*)

Spin of lok (j,m). (The derivation of this formula is given in the following chapters).

Spin of the lok $(j,\ m)$ in the general case:

$$M_{j,m} = K^{M}_{j,m} \bullet \frac{k(L_1 + L_2)}{c}$$

$K^{M}_{j,m}$ - Coefficient obtained after solving the equations.

k - Wave number. j=0,1,2,3,...; m=0,1,2,...,j;

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(1-37*)

j =0,1,2,…; m =0,1,2,… . $K_{j,m}$ - Some numerical coefficients that are obtained in the process of integrating formulas (1-33 *).

Below is the beginning of this infinite, both in length and in width of the table. For momentum moments in the absence of time, only a few coefficients have been calculated so far. It is established that for even j the angular momentum is zero.

Important: in the formula along with the amount (L_1+L_2) entered the constant C. This constant is different for different loks. Therefore, the table of coefficients $K_{j,m}$, may require improvement. To introduce a physical meaning, it is necessary to take into account the real masses of particles.

$K^{E}_{j,m}$, $K^{M}_{j,m}$

	m=0	m=1		m=2		m=3		m=4	
j	$K^{E}_{j,m}$	$K^{E}_{j,m}$	$K^{M}_{j,m}$	$K^{E}_{j,m}$	$K^{M}_{j,m}$	$K^{E}_{j,m}$	$K^{M}_{j,m}$	$K^{E}_{j,m}$	$K^{M}_{j,m}$
0	0,67	-----		-----		------		------	
1	0,40	0,31	-0,048	-----		------		------	
2	0,210	0,26	0,00	0,710	0,00	------		------	
3	0,150	0,26	-0,45	2,560	0,00	15,40	-16,79	------	
4	0,110	0,25		4,560		63,80		510,7	
5	0,090	0,25		7,060		169,5		3050	
6	0,077	0,25		10.06		362,2		10870	
7	0,067	0,25		13.56		678.0			
8	0,059	0,25		17.56					
9	0,053	0,25		22,06					
10	0,048	0,25		27,06					
11	0,044	0,25		32,56					
12	0,040	0,25		38,56					
13	0,037	0,25		45,06					
14	0,035	0,25		52,06					
15	0,032	0,25		59,56					
16	0,030	0,25		67,56					

Table 1.

Note. The values $k = \omega/c$ for each pair (j,m) various. Growth in tabular coefficients with growth (j,m) does not indicate that the masses of loks are growing. All solves the constant C in the solution, and the wave number k.

This procedure is then shown for the simplest case j=1 и m=0 .

Опубликовано:
https://www.academia.edu/34420925/Formula_for_the_total_energy_in_the_lok

http://vixra.org/abs/1801.0258

7. Calculation of the lok energy (1,0).

Below this procedure is shown for the simple case j = 1 and m = 0. What kind of particle, we do not yet know.

The displacement formula in a vertically placed lok. The dependence of W on the angular coordinates is absent. The dimensionless radial coordinate is used $q=k \bullet r$. k – coefficient, depending on the real mass of the particle.

The displacement formula for the lok j = 1 and m = 0
$$W_Z = \frac{cos(q) \cdot q - sin(q)}{q^2} \cdot cos(\theta)$$
k = 1/λ; - Wave number; c - Speed of light; ω - frequency; λ - wavelength; λ•ω=c;
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(1-22*)

The coefficient under the square root is temporarily omitted. Put it in the end. What is the coefficient k. This is nothing more than a link between ω in the vibrational part of the solution and the radial coordinate in the Bessel function: $\omega = k * c$, c is the speed of light. The physics is such that in each particle (in each solution), due to physical reasons, the frequency of the wave traveling in a circle is set. Physical causes are determined by the form of the solution, and the way the solution is wound up on itself, and how the whole system stabilizes to a stable state. Also, particles have excited states. This issue has not yet been investigated. This can only be observed. Thus, all further solutions and formulas are only an illustration of the state in which all the wave vortices are located = loks = elementary particles.

We have three displacement components as in (1-13):

Three displacement components for the lok $j=1$ и $m=0$ in spherical coordinates:

$$W_q = A = \frac{\cos(q)\cdot q - \sin(q)}{q^2}\cdot\cos(\theta)^2$$

$$W_\theta = B = \frac{\cos(q)\cdot q - \sin(q)}{q^2}\cdot\cos(\theta)\cdot(-\sin(\theta))$$

$$W_\phi = C = \frac{\cos(q)\cdot q - \sin(q)}{q^2}\cdot\cos(\theta)\cdot 0 = 0$$

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(1-23*) (1-24*) (1-25*)

We introduce useful notation:

$$Q = \frac{\cos(q)\cdot q - \sin(q)}{q^2}$$

$$R = \frac{d}{dr}\left[\frac{(\cos(r)\cdot r - \sin(r))}{r^2}\right]$$

$$R = \frac{2\cdot\sin(q) - 2\cdot q\cdot\cos(q) - q^2\cdot\sin(q)}{q^3}$$

We write out the components of the tensor (1-15):

The components of the strain tensor for a lok $j=1$ и $m=0$
in spherical coordinates:

$$Wqq = \frac{d}{dq} A = R \cdot \cos(\theta)^2$$

$$W_{\theta\theta} = \frac{1}{q} \cdot \frac{d}{d\theta} B + \frac{A}{q} = \frac{Q}{q} \cdot \sin(\theta)^2$$

$$W_{\phi\phi} = \frac{1}{q \cdot \sin(\theta)} \cdot \frac{d}{d\phi} C + \frac{B \cdot \cos(\theta)}{q \cdot \sin(\theta)} + \frac{A}{q} = 0$$

$$W_{q\theta} = \frac{1}{2} \cdot \frac{\frac{d}{d\theta} A}{q} + \left(\frac{d}{dq} B - \frac{B}{q} \right) \cdot \frac{1}{2} = \frac{-1}{2} \cdot \cos(\theta) \cdot \sin($$

$$W_{q\phi} = \frac{1}{2} \cdot \left(\frac{d}{dq} C - \frac{C}{q} \right) + \frac{\frac{d}{d\phi} A}{2 \cdot q \cdot \sin(\theta)} = 0$$

$$W\phi\theta = \frac{1}{2q \cdot \sin(\theta)} \cdot \frac{d}{d\phi} B + \frac{1}{2q} \cdot \frac{d}{d\theta} C - \frac{\cos(\theta)}{2q \cdot \sin(\theta)}$$

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(1-26*) (1-27*) (1-28*) (1-29*) (1-30*) (1-31*)

Now try to write out the formula for energy:

The energy of lok j=1 и m=0 in spherical coordinates:

The energy of lok $j=1$ и $m=0$ in spherical coordinates:

$$\int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\frac{1}{r^2}\cdot\left[\frac{L_1}{2}\left[Wqq^2+\left(W_{\theta\theta}\right)^2+\left(W_{\phi\phi}\right)^2\right]+L_2\cdot\left[\left(W_{q\theta}\right)^2+Wq\phi^2+W\phi\theta^2\right]\right.$$

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(1-32*)

Here: in the center, in the square bracket is the expression for the energy density itself. On the right after the parenthesis is the expression for the volume element. Left before the bracket is the expression ($1 / r^2$) for the law of winding.

So, we get six triple integrals. Glory to computer programs that give us access to knowledge of elementary particles! This is a new horizon of science.

We calculate these integrals. We calculate each separately.

W_r r

$$\int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\left[\frac{L_1}{2}\cdot\left(R\cos(\theta)^2\right)^2\right]\cdot\sin(\theta)\,d\phi\,d\theta\,dr =$$

W_r θ

$$\int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\left[\frac{L_1}{2}\cdot\left(\frac{Q}{q}\cdot\sin(\theta)^2\right)^2\right]\cdot\sin(\theta)\,d\phi\,d\theta\,dq = \frac{1}{}$$

W_φ φ

$$\int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\left[\frac{L_1}{2}\cdot\left(W_{\phi\phi}\right)^2\right]\cdot\sin(\theta)\,d\phi\,d\theta\,dq = 0$$

W_r θ

$$\int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\left[L_2\cdot\left(W_{q\theta}\right)^2\right]\cdot\sin(\theta)\,d\phi\,d\theta\,dq =$$

W_r φ	$\int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\left[L_2\cdot\left(W_{q\phi}\right)^2\right]\cdot\sin(\theta)\,d\phi\,d\theta dq = 0$
W_θ φ	$\int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\left[L_2\cdot\left(W_{\theta\phi}\right)^2\right]\cdot\sin(\theta)\,d\phi\,d\theta dr = 0$

We get a solution:

The total energy of the lok j=1 и m=0 (presumably a neutron)
$E_{1,0} = \frac{25}{225}\cdot L_1\cdot\pi^2 + \frac{7}{225}\cdot L_2\cdot\pi^2$
k = 1/λ; - Wave number; c - Speed of light; ω - frequency; λ - wavelength; λ•ω=c;
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(1-34*)

This formula is something that relates the elastic properties of Gukuum L_1 and L_2 with the mass of (supposed!) elementary particles and the angular velocity of their rotation. Applying the formula of Lord Kelvin, we obtain:

Relationship of mass μ of lok j=1, m=0 and elastic properties of the Gukuum L_1 and L_2
$\mu c^2 = \frac{25}{225}\cdot L_1\cdot\pi^2 + \frac{7}{225}\cdot L_2\cdot\pi^2$
K=1/λ - wave number; c - speed of light; ω - frequency; λ - wavelength; λ•ω=c;
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(1-35*)

While we do not know what kind of particle it is. Two such equations for two different loks will make it possible to determine L_1 and L_2 of cosmic Gukuum.

7. The energy of wave vortices (corrections).

Опубликовано:
https://www.academia.edu/34448246/Examples_of_formulas_for_energy_in_loks

https://www.academia.edu/35938766/The_energy_of_wave_vortices_corrections_

Our mathematical model is that:
1. The universe is a rigid elastic continuum = gukuum. This continuum does not have any numeric parameters or constraints. This continuum may not have any mass or density. But by virtue of the law of conservation, it has some resistance to deformations.
2. In this continuum ALWAYS existed and ALWAYS will exist all kinds of waves. The movement of the waves creates the whole picture of the universe that we observe. Including wave vortices create material particles. The mathematical description is attached.
3. All visible and invisible objects of the universe, from large to small, are wave objects in this continuum. All visible and invisible objects of the universe, from large to small, are solutions of the wave equation:

The uniform formula of all Matter, of all Particles, of all Fields and all Quantums of our Universe:
$$\frac{\partial^2 \mathbf{W}}{\partial t^2} - c^2 \Delta \mathbf{W} = 0;$$
$\overline{\mathbf{W}}$ - displacement vector of elastic space
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(1-1)

4. All wave objects in the gukuum are described by an algebraic task parameters of elasticity of a solid body and a three-dimensional wave equation. When
This simply assumes that these are "small" and "linear" waves. All questions like "what is" does not make sense. Continuum and everything.
5. As physical = letter parameters it is convenient to use the Lame coefficients L_1, L_2, L_3 (these are elementary combinations of the coefficients of compression, shear and torsion of a solid body). There are no numerical restrictions on the Lamé coefficients. Just the coefficients of Lame L_1, L_2, L_3 and everything.

6. Thus, the universe and all the matter contained in it are described only by letters, algebra. However, objects can be compared numerically. For example, the mass of the proton wave vortex can be numerically compared with the mass of the electron wave vortex.
7. All elementary particles, fields, photons, ball lightning, even lightning, dark matter are different kinds of solutions to the wave equation. So far we know several types of solutions to the wave equation, three spherical and three cylindrical, but perhaps this is not the only way the universe is limited.
8. **The nonlinearity** that exists in the universe is explained by the law of "**winding a linear solution on itself**". This is a very important law that makes it possible to understand the formation of elementary particles. As a result of such winding, or layering, the linear solution becomes non-linear and creates all the variety of the material world. This law consists in adding to the integral for the energy a factor $\mathbf{1/r^2}$.

2. Calculation of the energy of loks.

Next, everywhere we work in spherical coordinates.

So, we take in mind the wave vortex = lok, and position it so that the rotation of the wave occurs around the axis Z. We make the assumption that all the oscillations in the loks occur in the same direction. So it or not we do not know yet. But this assumption is close to the truth. It is true in the first degree of approximation. This is our mathematical model. We locate the lok in such a way that these oscillations in the loks occur along the axis Z, and the wave itself ran around the axis Z. Similarly, it runs around the axis Z and the energy of lok. And in exactly the same way the movement of the energy of the lok creates an angular momentum = spin.

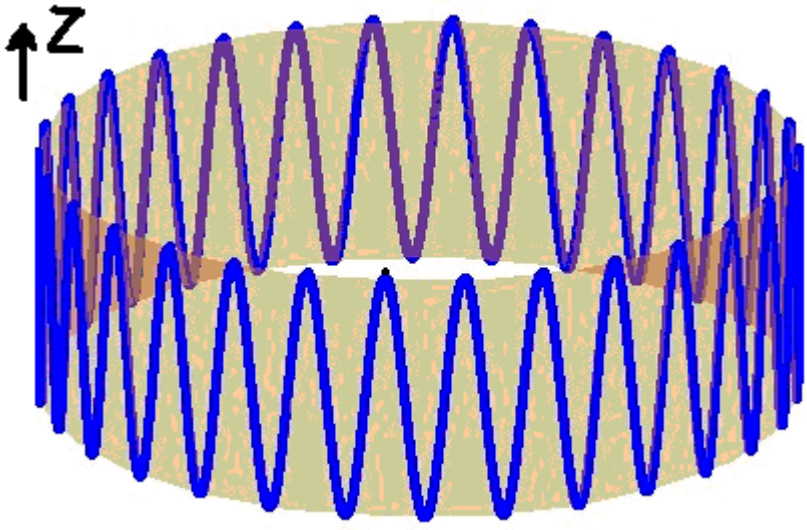

Fig.1.

Figure 1 shows a fragment running around the axis Z wave. The oscillations in it are directed along the axis Z. And the wave runs around the axis Z. As will be seen from the following, the carrier frequency (in blue) is constant over the whole wave vire. However, with the distance from the axis Z the amplitude of the traveling wave

changes. In addition, with the distance from the axis Z the angular velocity of the wave changes. That is, the outer layers are lagging behind the inner ones.

A particular solution of the wave equation, spherical standing waves:

$$W(r,\theta,\phi,t)_{i,j,m} = C_{i,j,m} \cdot J_j \cdot (k \cdot r) \cdot Y_{j,m} \cdot (\theta,\phi) \cdot \Phi_m (m \cdot \phi - k \cdot c \cdot t)$$

(1-2)

This formula is obtained from a linear combination of two solutions with different $\Phi_m(\varphi)$.

i,j,m - whole numbers. i=1,2,3. j=0,1,2… m=0,1,…,j;

$J_j(k \bullet r)$ - Spherical Bessel functions of the first kind;

$Y_j(\theta,\varphi)$ - spherical surface harmonics;
$Y_j(\theta,\varphi)=P_{jm}(cos\theta) \bullet \Phi_m(\varphi)$;
$\Phi_m(\varphi)=sin(m \bullet \varphi - k \bullet c \bullet t)$;

$P_{jm}(cos\theta)$ - The adjoint Legendre function of type 1, of order m and rank j:

$$P_{j,m}(x) = \left(1-x^2\right)^{\frac{m}{2}} \cdot \frac{1}{2^j \cdot j!} \cdot \frac{d^{j+m}}{dx^{j+m}} \left(x^2-1\right)^j$$

(1-3)

In formulas, the quantity k. It is related only to the actual mass (energy) of the particle, and it is determined by it. This is the link between ω in the vibrational part of the solution and the radial coordinate in the Bessel function: $\omega = k \bullet c$, c - speed of light. In Fig. (1-1) $\omega = k \bullet c$ – это частота синей синусоиды, «несущей» волновой частоты. Также $k=1/\lambda$, where λ – approximate size of the wave vortex. The physics is such that in each particle (in each solution), due to physical reasons, the frequency of the wave traveling along the circle and its particle size are set. Physical causes are determined by the form of the solution, and the way the solution is wound up on itself, and how the whole system stabilizes to a stable state. Also, particles have excited states. To explore this is the business of the future. This can only be observed. Thus, all further solutions and formulas are an illustration of the actual state in which all the wave vortices are located = loks = elementary particles.

Since our lok is placed vertically, the following relationships hold. In the solution for the displacement vector **W** there is only one component W_Z. W_x и W_y are equal to zero. We have:

$$W_x=0 \qquad W_y=0$$

(1-4-1)

The following formulas for the transition between Cartesian and spherical coordinates:

Стандартные преобразования между декартовыми и сферическими координатами:

$$W_r = W_x \sin\theta \cos\varphi + W_y \sin\theta \sin\varphi + W_z \cos\theta ;$$

$$W_\theta = W_x \cos\theta \cos\varphi + W_y \cos\theta \sin\varphi - W_z \sin\theta ;$$

$$W_\varphi = - W_x \sin\varphi + W_y \cos\varphi ;$$

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(1-4-2)

In this way:

$$W_r = W_Z \cdot \cos(\theta) \qquad W_\theta = W_Z \cdot (-\sin(\theta)) \qquad W_\phi = 0$$

(1-5)

Next, we go for simplicity to the dimensionless length:

$$k \cdot r = q$$

(1-6)

According to mathematical reference books, we have a formula for the bias W_Z for the first three loks (0,0), (1,0), (1,1):

(0,0)	$W_Z(q,\theta,\phi) = \frac{sin(q)}{q}\cdot 1\cdot 1$
(1,0)	$W_Z(q,\theta,\phi) = \frac{sin(q) - cos(q)\cdot q}{q^2}\cdot cos(\theta)$
(1,1)	$W_Z(q,\theta,\phi) = \frac{sin(q) - cos(q)\cdot q}{q^2}\cdot sin(\theta)\cdot sin(\phi)$

(1-7)

Useful formulas:

$P = \frac{sin(q)}{q}$	$Q = \frac{cos(q)\cdot q - sin(q)}{q^2}$	$R = \frac{2\cdot sin(q) - 2\cdot q\cdot cos(q) - q^2\cdot sin(q)}{q^3}$

(1-8)

Further, we write out the formulas for the displacements in spherical coordinates:

	(0,0)	(1,0)	(1,1)
A	$W_q = P\cdot cos(\theta)$	$W_q = Q\cdot cos(\theta)^2$	$W_q = Q\cdot cos(\theta)\cdot sin(\theta)\cdot sin(\phi)$
B	$W_\theta = P\cdot(-sin(\theta))$	$W_\theta = Q\cdot cos(\theta)\cdot(-sin(\theta))$	$W_\theta = Q\cdot sin(\theta)\cdot(-sin(\theta))\cdot sin(\phi)$
C	$W_\phi = P\cdot 0 = 0$	$W_\phi = Q\cdot cos(\theta)\cdot 0 = 0$	$W_\phi = Q\cdot cos(\theta)\cdot 0 = 0$

(1-9)

We have formulas for the strain tensor in spherical coordinates:

The·strain·tensor·in·spherical·coordinates:¤	
$W\phi\theta = \frac{1}{2q\cdot sin(\theta)}\cdot\frac{d}{d\phi}B + \frac{1}{2q}\cdot\frac{d}{d\theta}C - \frac{cos(\theta)}{2q\cdot sin(\theta)}\cdot C$ ¤	$Wqq = \frac{d}{dq}A$ ¤
$W_{q\theta} = \frac{1}{2}\cdot\frac{\frac{d}{d\theta}A}{q} + \left(\frac{d}{dq}B - \frac{B}{q}\right)\cdot\frac{1}{2}$ ¤	$W_{\phi\phi} = \frac{1}{q\cdot sin(\theta)}\cdot\frac{d}{d\phi}C + \frac{B\cdot cos(\theta)}{q\cdot sin(\theta)} + \frac{A}{q}$ ¤
$W_{q\phi} = \frac{1}{2}\cdot\left(\frac{d}{dq}C - \frac{C}{q}\right) + \frac{\frac{d}{d\phi}A}{2\cdot q\cdot sin(\theta)}$ ¤	$W_{\theta\theta} = \frac{1}{q}\cdot\frac{d}{d\theta}B + \frac{A}{q}$ ¤

(1-10)

The total energy of the lok after all simplifications is expressed by the formula:

$$\int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\left[\frac{L_1}{2}\left[Wqq^2+\left(W_{\theta\theta}\right)^2+\left(W_{\phi\phi}\right)^2\right]+L_2\cdot\left[\left(W_{q\theta}\right)^2+Wq\phi^2+W\phi\theta^2\right]\right]\cdot\sin(\theta)\,d\phi\,d\theta\,dq$$

(1-11)

Further, we calculate the elements of the strain and energy tensor for each lok separately.

Lok (0,0).

For it, only two terms of the strain tensor are nonzero:

$$Wqq = Q\cdot\cos(\theta) \qquad W_{q\theta} = Q\cdot\frac{\sin(\theta)}{2}$$

(1-12)

The energy of the lok (0,0). Here the square of the strain tensor is integrated over the space. The volume element contains a factor q^2 , But the law of winding the solution contains $1/q^2$. These factors cancel each other and simplify the integral.

$$E_{0,0} = \int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\frac{L_1}{2}\cdot\left(Q\cdot\cos(\theta)\right)^2\cdot\sin(\theta)\,d\phi\,d\theta\,dq + \int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\left[L_2\cdot\left(Q\cdot\frac{\sin(\theta)}{2}\right)^2\right]\cdot\sin(\theta)\,d\phi\,d\theta\,dq$$

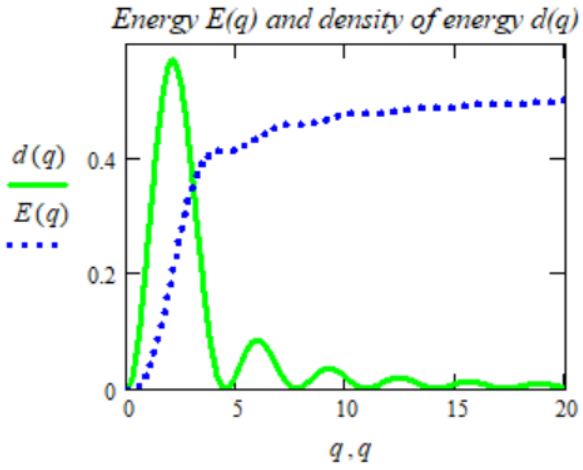
(1-13)

After substituting the value Q by the formula (1-8), we obtain:

$$E_{0,0}(q) = \frac{2}{3}\cdot\pi\cdot\left(L_1+L_2\right)\cdot\int_0^{q}\left[\frac{\left(\cos(q)\cdot q-\sin(q)\right)}{q^2}\right]^2 dq$$

(1-14)

Lok (0,0) has an axial symmetry. This can be seen from the formula for the displacement, there are no angular coordinates in it. The graph of radial energy distribution and energy density has the form:



$$E_{0,0} = \frac{1}{9}\cdot L_1\cdot\pi^2 + \frac{1}{9}\cdot L_2\cdot\pi^2$$

Fig.2.

As can be seen from the graph, the lok (0,0) has a low density in the center, as if emptiness.

Lok (1,0).

Note that here q quite different than for lok (0,0).

Non-zero elements of the strain tensor:

$$Wqq = R\cdot\cos(\theta)^2 \qquad W_{\theta\theta} = \frac{Q}{q}\cdot\sin(\theta)^2 \qquad W_{q\theta} = \frac{-1}{2}\cdot\cos(\theta)\cdot\sin(\theta)\cdot\frac{(Q + R\cdot q)}{q}$$

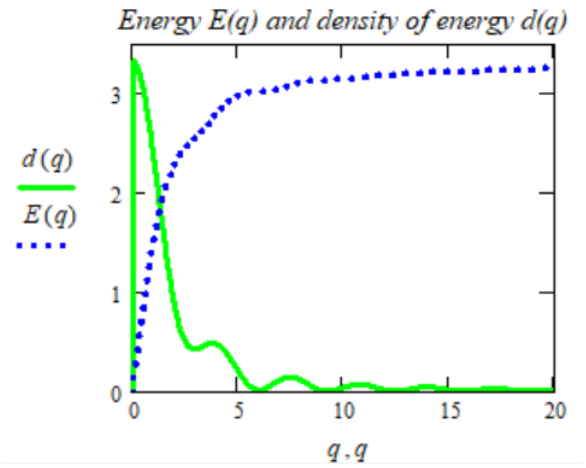
(1-15)

After integrating formula (1-11) with respect to the angular coordinates, we obtain:

$$E_{1,0}(q) = L_1\cdot\left(\frac{16}{15}\cdot\pi\right)\cdot\int_0^q Q^2\,dq + L_1\cdot\left(\frac{2}{5}\cdot\pi\right)\cdot\int_0^q R^2\,dq + L_2\cdot\left(\frac{2}{15}\cdot\pi\right)\cdot\int_0^q\left(\frac{Q}{q} + R\right)^2 dq$$

(1-16)

Assuming that $L_1=L_2$, which in most cases is valid for all terrestrial materials, we obtain the following graphical dependences of the radial energy distribution and energy density:



$$E_{1,0} = \frac{25}{225}\cdot L_1\cdot\pi^2 + \frac{7}{225}\cdot L_2\cdot\pi^2$$

Fig.3.

As can be seen from the graph, the lok (1,0) has a high density in the center, the so-called "core". This property exists for a proton and for a neutron.

Lok (1,1).

Note that here q quite different than for loks (0,0) and (1,0).
Non-zero elements of the strain tensor:

$$Wqq = R\cdot\cos(\theta)\cdot\sin(\theta)\cdot\sin(\phi) \qquad W_{\theta\theta} = \frac{Q}{q}\cdot(-\cos(\theta)\cdot\sin(\theta))\cdot\sin(\phi) \qquad W_{\theta\phi} = \frac{Q}{2\cdot q}\cdot(-\cos(\phi)\cdot\sin(\theta))$$

$$W_{q\theta} = \frac{\sin(\phi)}{2}\cdot\left(\frac{Q}{q}\cdot\cos(\theta)^2 - R\cdot\sin(\theta)^2\right) \qquad W_{q\phi} = \frac{Q}{2q}\cdot\cos(\phi)\cdot\cos(\theta)$$

(1-17)

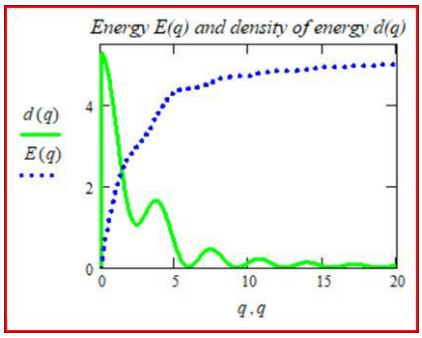
Lok (1,1) is not axisymmetric due to the presence of the dependence on φ.

After integrating formula (1-11) with respect to the angular coordinates, we obtain:

$$E(q) = \frac{L_1\cdot\pi}{15}\cdot\left(6\cdot\int_0^\infty R^2\,dq + 2\cdot\int_0^\infty \frac{Q^2}{q^2}\,dq\right) + \frac{L_2\cdot\pi}{30}\cdot\left(8\cdot\int_0^\infty R^2\,dq - 4\cdot\int_0^\infty \frac{Q}{q}\cdot R\,dq + 18\cdot\int_0^\infty \frac{Q^2}{q^2}\,dq\right)$$

(1-18)

Assuming that $L_1=L_2$, which in most cases is valid for all terrestrial materials, we obtain the following graphical dependences of the radial energy distribution and energy density:



$$E_{1,1} = \frac{1}{45}\cdot L_1\cdot\pi^2 + \frac{14}{225}\cdot L_2\cdot\pi^2$$

Fig.4.

As can be seen from the graph, the lok (1,1) also has a high density in the center, the so-called "core". This property exists for a proton and for a neutron. Therefore, it is very likely that the loks (1,0) and (1,1) are a proton and a neutron. But who is who, we do not know yet. Identification will continue in the study of the angular momentum of loks.

As our analysis shows, which is not given here, Loks (3.0), (3.1), (3.2), (3.3), and also Lok (5.0) also have finite energy. Large values of integer arguments create serious computer problems. Loks (2,0), (2,1), (2,2) and all Loks (4,0), (4,1), (4,2), (4,3), (4,4) have energy integrals that go to infinity. Of course, this does not mean the physical meaninglessness of these loks. Simply this means that the given solution is not physically stable and creeps into some other solutions described by other solutions (not spherical) of the wave equation.

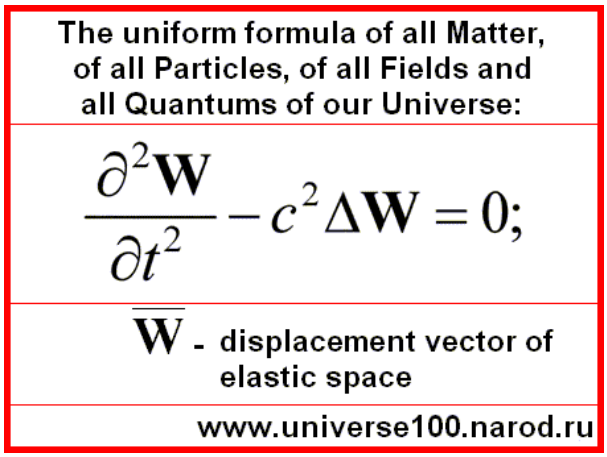
9. Formulas for energy in Loks. j=3.

http://vixra.org/abs/1804.0097

1. The essence of the hypothesis.

Our mathematical model is that:

1. The universe is a rigid elastic continuum. This continuum does not have any numeric parameters or constraints. This continuum may not have any mass or density. But by virtue of the law of conservation, it has some resistance to deformations.
2. In this continuum ALWAYS existed and ALWAYS will exist all kinds of waves. The movement of the waves creates the whole picture of the universe that we observe. Including wave vortices create material particles. The mathematical description is attached.
3. All visible and invisible objects of the universe, from large to small, are wave objects in this continuum. All visible and invisible objects of the universe, from large to small, are solutions of the wave equation:



(1-1)

4. All wave objects in the gukuum are described by an algebraic task parameters of elasticity of a solid body and a three-dimensional wave equation. When This simply assumes that these are "small" and "linear" waves. All questions like "what is" does not make sense. Continuum and everything.

5. As physical = letter parameters it is convenient to use the Lame coefficients L_1, L_2, L_3 (these are elementary combinations of the coefficients of compression, shear and torsion of a solid body). There are no numerical restrictions on the Lamé coefficients. Just the coefficients of Lame L_1, L_2, L_3 and everything.

6. Thus, the universe and all the matter contained in it are described only by letters, algebra. However, objects can be compared numerically. For example, the mass of the proton wave vortex can be numerically compared with the mass of the electron wave vortex.

7. All elementary particles, fields, photons, ball lightning, even lightning, dark matter are different types of solutions of the wave equation. So far we know several types of solutions to the wave equation, three spherical and three cylindrical, but perhaps this is not the only way to limit the universe.

8. The nonlinearity that exists in the universe is explained by the law of "winding a linear solution on itself". This is a very important law that makes it possible to understand the formation of elementary particles. As a result of such winding, or layering, the linear solution becomes non-linear and creates all the variety of the material world. This law consists in adding to the integral for the energy a factor $\mathbf{1/r^2}$.

2. Calculation of the energy of loks.

Further everywhere, as in the first part, we work in spherical coordinates.

So, we take in mind the wave whirlwind = lok, and position it so that the wave rotation occurs around the Z axis. We assume that all the oscillations in the lok occur in the same direction. So it or not we do not know yet. But this assumption is close to the truth. It is true in the first degree of approximation. This is our mathematical model. We locate the locus so that these oscillations in the locus occur along the Z axis, and the wave itself runs around the Z axis. Similarly, the Lok energy moves around the Z axis. And in exactly the same way the movement of the energy of the lok creates an angular momentum = spin.

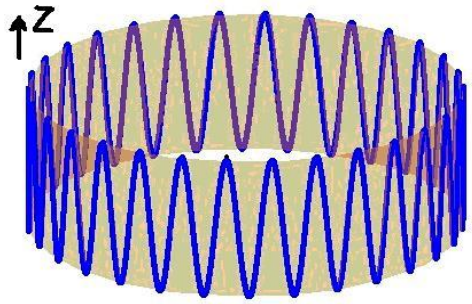


Fig.1.

Figure 1 shows a fragment of a wave traveling around the Z axis. The oscillations in it are directed along the Z axis. And the wave runs around the Z axis. As will be seen from the following, the carrier frequency (in blue) is constant on the entire wave vire. However, with the distance from the Z axis, the amplitude of the traveling wave changes. In addition, the angular velocity of the wave changes with the distance from the Z axis. That is, the outer layers are lagging behind the inner ones.

A particular solution of the wave equation, spherical standing waves:

$$W(r,\theta,\phi,t)_{i,j,m} = C_{i,j,m} \cdot J_j \cdot (k \cdot r) \cdot Y_{j,m} \cdot (\theta,\phi) \cdot \Phi_m (m \cdot \phi - k \cdot c \cdot t)$$

(1-2)

This formula is obtained from a linear combination of two solutions with different $\Phi_m(\varphi)$.

i,j,m - whole numbers. i=1,2,3. j=0,1,2… m=0,1,…,j;

$J_j(k \bullet r)$ - Spherical Bessel functions of the first kind;

$Y_j(\theta,\varphi)$ - spherical surface harmonics;
$Y_j(\theta,\varphi)=P_{jm}(cos\theta) \bullet \Phi_m(\varphi)$;
$\Phi_m(\varphi)=sin(m \bullet \varphi - k \bullet c \bullet t)$;

$P_{jm}(cos\theta)$ - The adjoint Legendre function of type 1, of order m and rank j:

$$P_{j,m}(x) = \left(1-x^2\right)^{\frac{m}{2}} \cdot \frac{1}{2^j \cdot j!} \cdot \frac{d^{j+m}}{dx^{j+m}} \left(x^2-1\right)^j$$

(1-3)

In the formulas, k is repeatedly found. It is connected only with the actual mass (energy) of the particle, and it is determined by it. This is the link between ω in the vibrational part of the solution and the radial coordinate in the Bessel function: $\omega=k\bullet c$, c - speed of light. In Fig. (1-1) $\omega=k\bullet c$ – This is the frequency of the blue sine wave, which "carries" the wave frequency. Also $k=1/\lambda$, where λ – approximate size of the wave vortex. The physics is such that in each particle (in each solution), due to physical reasons, the frequency of the wave traveling along the circle and its particle size are set. Physical causes are determined by the form of the solution, and the way the solution is wound up on itself, and how the entire system stabilizes to a stable state. Also, particles have excited states. To explore this is the business of the future. This can only be observed. Thus, all further solutions and formulas are an illustration of the actual state in which all the wave vortices are located = loks = elementary particles.

Since our lok is placed vertically, the following relationships hold. In the solution for the displacement vector **W** there is only one component W_Z. W_x и W_y are equal to zero. We have:

$W_x=0$	$W_y=0$

(1-4-1)

The following formulas for the transition between Cartesian and spherical coordinates:

Стандартные преобразования между декартовыми и сферическими координатами:

$$W_r = W_x \sin\theta \cos\varphi + W_y \sin\theta \sin\varphi + W_z \cos\theta ;$$

$$W_\theta = W_x \cos\theta \cos\varphi + W_y \cos\theta \sin\varphi - W_z \sin\theta ;$$

$$W_\varphi = - W_x \sin\varphi + W_y \cos\varphi ;$$

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(1-4-2)

In this way:

$W_r = W_Z \cdot \cos(\theta)$	$W_\theta = W_Z \cdot (-\sin(\theta))$	$W_\phi = 0$

(1-5)

Next, we go for simplicity to the dimensionless length:

$$k \cdot r = q$$

(1-6)

We have verified that all loks with $j = 2$ have a theoretical infinity when calculating energies. Therefore, we missed these loks.

According to mathematical reference books, we have a formula for the bias W_Z for the four loks (3,0), (3,1), (3,2) and (3,3):

	$W_Z(q,\theta,\phi)$
(3,0)	$\frac{-\left(3\cdot sin(q)\cdot q^2 + 6\cdot cos(q)\cdot q - 6\cdot sin(q) - cos(q)\cdot q^3\right)}{q^4}\cdot\left(\frac{5}{2}\cdot cos(\theta)^3 - \frac{3}{2}\cdot cos(\theta)\right)\cdot const$
(3,1)	$\frac{-\left(3\cdot sin(q)\cdot q^2 + 6\cdot cos(q)\cdot q - 6\cdot sin(q) - cos(q)\cdot q^3\right)}{q^4}\cdot\frac{3}{2}\cdot sin(\theta)\cdot\left(5\cdot cos(\theta)^2 - 1\right)\cdot sin(\phi)$
(3,2)	$W_Z(q,\theta,\phi) = \frac{-\left(3\cdot sin(q)\cdot q^2 + 6\cdot cos(q)\cdot q - 6\cdot sin(q) - cos(q)\cdot q^3\right)}{q^4}\cdot\left(15\cdot sin(\theta)^2\cdot cos(\theta)\right)\cdot\left(sin(2\cdot\phi)\cdot C_1 - cos(2\cdot\phi)\cdot C_2\right)$
(3,3)	$W_Z(q,\theta,\phi) = \frac{-\left(3\cdot sin(q)\cdot q^2 + 6\cdot cos(q)\cdot q - 6\cdot sin(q) - cos(q)\cdot q^3\right)}{q^4}\cdot 15\cdot sin(\theta)^3\cdot\left(sin(3\cdot\phi)\cdot C_1 - cos(3\cdot\phi)\cdot C_2\right)$

(1-7)

Useful formulas:

S	$\frac{6\cdot q\cdot cos(q) + 3q^2\cdot sin(q) - 6\cdot sin(q) - q^3\cdot cos(q)}{q^4}$
T	$\frac{\left(sin(q)\cdot q^4 + 4\cdot cos(q)\cdot q^3 - 12\cdot sin(q)\cdot q^2 - 24\cdot cos(q)\cdot q + 24\cdot sin(q)\right)}{q^5}$

(1-8)

Further, we write out the formulas for the displacements in spherical coordinates:

$A=V_q,\quad B=V_\theta,\quad C=V_\varphi.$		
	(3,0)	(3,1)
A	$-S\cdot\left(\frac{5}{2}\cdot\cos(\theta)^3-\frac{3}{2}\cdot\cos(\theta)\right)\cdot\cos(\theta)$	$-S\cdot\left(\frac{5}{2}\cdot\cos(\theta)^3-\frac{3}{2}\cdot\cos(\theta)\right)\cdot\cos(\theta)\cdot\sin(\phi)$
B	$-S\cdot\left(\frac{5}{2}\cdot\cos(\theta)^3-\frac{3}{2}\cdot\cos(\theta)\right)\cdot(-\sin(\theta))$	$-S\cdot\left(\frac{5}{2}\cdot\cos(\theta)^3-\frac{3}{2}\cdot\cos(\theta)\right)\cdot(-\sin(\theta))\cdot\sin(\phi)$
C	0	0
	(3,2)	(3,3)
A	$-S\cdot\left(15\cdot\sin(\theta)^2\cdot\cos(\theta)\right)\cdot\cos(\theta)\cdot\sin(2\,\phi)$	$-S\cdot15\cdot\sin(\theta)^2\cdot\cos(\theta)\cdot\cos(\theta)\cdot\sin(3\,\phi)$
B	$-S\cdot\left(15\cdot\sin(\theta)^2\cdot\cos(\theta)\right)\cdot(-\sin(\theta))\cdot\sin(2\,\phi)$	$-S\cdot15\cdot\sin(\theta)^2\cdot\cos(\theta)\cdot(-\sin(\theta))\cdot\sin(3\,\phi)$
C	0	0

(1-9)

We have formulas for the strain tensor in spherical coordinates:

The strain tensor in spherical coordinates:	
$W\phi\theta=\frac{1}{2q\cdot\sin(\theta)}\cdot\frac{d}{d\phi}B+\frac{1}{2q}\cdot\frac{d}{d\theta}C-\frac{\cos(\theta)}{2q\cdot\sin(\theta)}\cdot C$	$Wqq=\frac{d}{dq}A$
$W_{q\theta}=\frac{1}{2}\cdot\frac{\frac{d}{d\theta}A}{q}+\left(\frac{d}{dq}B-\frac{B}{q}\right)\cdot\frac{1}{2}$	$W_{\phi\phi}=\frac{1}{q\cdot\sin(\theta)}\cdot\frac{d}{d\phi}C+\frac{B\cdot\cos(\theta)}{q\cdot\sin(\theta)}+\frac{A}{q}$
$W_{q\phi}=\frac{1}{2}\cdot\left(\frac{d}{dq}C-\frac{C}{q}\right)+\frac{\frac{d}{d\phi}A}{2\cdot q\cdot\sin(\theta)}$	$W_{\theta\theta}=\frac{1}{q}\cdot\frac{d}{d\theta}B+\frac{A}{q}$

(1-10)

The total energy of the lok after all simplifications is expressed by the formula:

$$\int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\left[\frac{L_1}{2}\left[Wqq^2+\left(W_{\theta\theta}\right)^2+\left(W_{\phi\phi}\right)^2\right]+L_2\cdot\left[\left(W_{q\theta}\right)^2+Wq\phi^2+W\phi\theta^2\right]\right]\cdot\sin(\theta)\,d\phi\,d\theta\,dq$$

(1-11)

Further, we calculate the elements of the strain and energy tensor for each lok separately.

Lok (3,0).
For him, three terms are not zero:

1	W_{qq}	$-T\cdot\left(\frac{5}{2}\cdot cos(\theta)^3-\frac{3}{2}\cdot cos(\theta)\right)\cdot cos(\theta)$
2	$W_{\theta\theta}$	$\frac{S}{q}\cdot\left(\frac{-15}{2}\cdot cos(\theta)^2\cdot sin(\theta)+\frac{3}{2}\cdot sin(\theta)\right)\cdot sin(\theta)$
3	$W_{\varphi\varphi}$	0
4	$W_{q\theta}$	$\frac{-1}{8}\cdot\left[cos(\theta)\cdot sin(\theta)\cdot\frac{\left(15\cdot S\cdot cos(\theta)^2-5\cdot T\cdot q\cdot cos(\theta)^2+3\cdot T\cdot q-3\cdot S\right)}{q}\right]$
5	$W_{q\varphi}$	0
6	$W_{\theta\varphi}$	0

(1-12)

Lok energy (3.0). Here the square of the strain tensor is integrated over the space. The volume element contains a factor q^2 , But the law of winding the solution contains $1/q^2$. These factors cancel each other and simplify the integral.

$$E_{3,0}=\int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\left[\frac{L_1}{2}\left[Wqq^2+\left(W_{\theta\theta}\right)^2+\left(W_{\phi\phi}\right)^2\right]+L_2\cdot\left[\left(W_{q\theta}\right)^2+Wq\phi^2+W\phi\theta^2\right]\right]\cdot sin(\theta)\,d\phi\,d\theta\,dq$$

(1-13)

After substituting the value $W_{i,j}$ by formula (1-12), we obtain three nonzero integrals:

$E_1=\frac{L_1}{2}\cdot\left(\frac{92}{315}\cdot\pi\right)\cdot\int_0^{\infty}T^2\,dq$	$E_2=\frac{L_1}{2}\cdot\left(\frac{128}{35}\cdot\pi\right)\cdot\int_0^{\infty}\left(\frac{S}{q}\right)^2 dq$	$E_4=\pi\cdot L_2\cdot\int_0^{\infty}\frac{96\cdot S^2-32\cdot S\cdot T\cdot q+16\cdot T^2\cdot q^2}{q^2}\,dq$

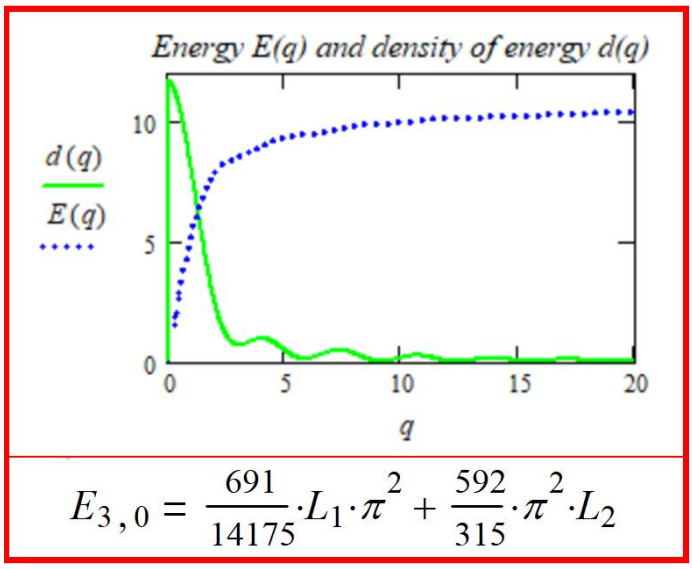
(1-14)

It turns out that all integrals are taken and equal:

$\int_0^{\infty}T^2\,dq=\frac{1}{18}\cdot\pi$	$\int_0^{\infty}\left(\frac{S}{q}\right)^2 dq=\frac{1}{45}\cdot\pi$	$\int_0^{\infty}\left(\frac{S\cdot T}{q}\right)dq=\frac{1}{28}\cdot\pi$

(1-15)

Lok (3.0) has an axial symmetry. This can be seen from the formula for the displacement (1-12), there are no angular coordinates φ in it. The graph of radial energy distribution and energy density has the form:



$$E_{3,0} = \frac{691}{14175}\cdot L_1\cdot\pi^2 + \frac{592}{315}\cdot\pi^2\cdot L_2$$

Fig.2.

As can be seen from the graph, Lok (3,0) has a classical seal in the center.

Lok (3.1).

Note that here q is quite different than for lok (3.0).
Non-zero elements of the strain tensor:

1	W_{qq}	$T\cdot\left(\frac{5}{2}\cdot\cos(\theta)^3 - \frac{3}{2}\cdot\cos(\theta)\right)\cdot\cos(\theta)\cdot\sin(\phi)$
2	$W_{\theta\theta}$	$\frac{-3\cdot S}{2}\cdot\sin(\phi)\cdot\sin(\theta)^2\cdot\frac{\left(5\cdot\cos(\theta)^2 - 1\right)}{q}$
3	$W_{\varphi\varphi}$	0
4	$W_{q\theta}$	$\frac{1}{4}\cdot\sin(\phi)\cdot\cos(\theta)\cdot\left[\frac{S}{q}\cdot\left(15\cdot\sin(\theta)\cdot\cos(\theta)^2 - 3\cdot\sin(\theta)\right) + T\cdot\left(3\cdot\cos(\theta) - 5\cdot\cos(\theta)^3\right)\right]$
5	$W_{q\varphi}$	0
6	$W_{\theta\varphi}$	0

(1-16)

The energy of the lok (3.1). The square of the strain tensor is integrated over the space. The volume element contains a factor q^2, But the law of winding the solution contains $1/q^2$. These factors cancel each other and simplify the integral.

$$E_{3,1} = \int_0^{\infty} \int_0^{\pi} \int_0^{2\cdot\pi} \left[\frac{L_1}{2} \left[Wqq^2 + \left(W_{\theta\theta}\right)^2 + \left(W_{\phi\phi}\right)^2 \right] + L_2 \cdot \left[\left(W_{q\theta}\right)^2 + Wq\phi^2 + W\phi\theta^2 \right] \right] \cdot \sin(\theta)\, d\phi\, d\theta\, dq$$

(1-17)

After substituting the value $W_{i,j}$ by formula (1-12), we obtain three nonzero integrals:

$$E_1 = \frac{L_1}{2} \cdot \left(\frac{46}{315} \cdot \pi \right) \cdot \int_0^{\infty} T^2\, dq \qquad E_2 = \frac{L_1}{2} \cdot \left(\frac{64}{35} \cdot \pi \right) \cdot \int_0^{\infty} \left(\frac{S}{q} \right)^2 dq \qquad E_4 = \frac{1}{630} \cdot \pi \cdot L_2 \cdot \int_0^{\infty} \frac{\left(252 \cdot S^2 + 23 \cdot T^2 \cdot q^2\right)}{q^2}\, dq$$

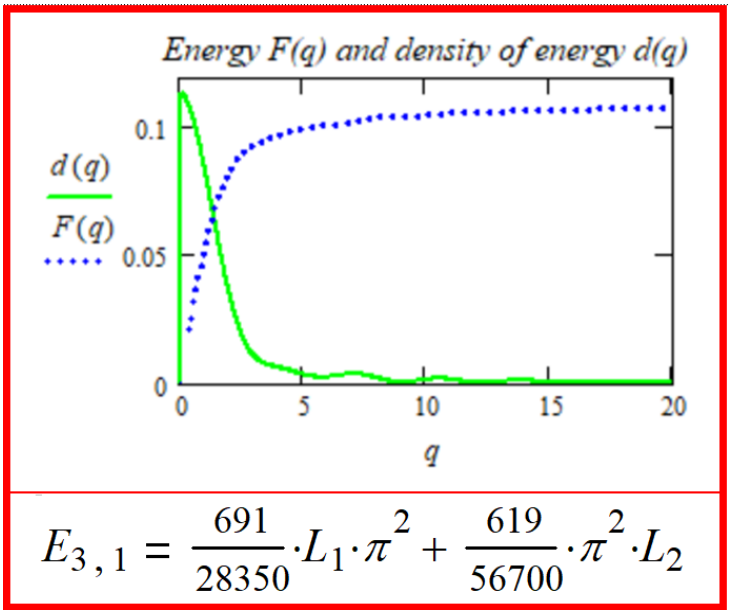
(1-18)

It turns out that all integrals are taken and equal:

$$\int_0^{\infty} T^2\, dq = \frac{1}{18} \cdot \pi \qquad \int_0^{\infty} \left(\frac{S}{q} \right)^2 dq = \frac{1}{45} \cdot \pi$$

(1-19)

Lok (3.1) has no axial symmetry. This can be seen from the formula for the displacement (1-16), in it there is an angular coordinate φ. The graph of radial energy distribution and energy density has the form:



$$E_{3,1} = \frac{691}{28350}\cdot L_1\cdot\pi^2 + \frac{619}{56700}\cdot\pi^2\cdot L_2$$

Fig.3.

As can be seen from the graph, the lok (3.1) also has a classical compaction in the center.

Lok (3.2).

Note that here q is the same as for loks (3,0) and (3,1).
Non-zero elements of the strain tensor:

1	W_{qq}	$Wqq = T\cdot\left[\left(15\cdot sin(\theta)^2\cdot cos(\theta)\right)\cdot cos(\theta)\cdot sin(2\cdot\phi)\right]$
2	$W_{\theta\theta}$	$15\cdot\frac{S}{q}\cdot sin(\theta)^2\cdot\left(3\cdot cos(\theta)^2 - sin(\theta)^2 + sin(\theta)\cdot cos(\theta)\right)\cdot sin(2\cdot\phi)$
3	$W_{\varphi\varphi}$	0
4	$W_{q\theta}$	$\frac{-15}{2}\cdot sin(\theta)\cdot cos(\theta)\cdot sin(2\cdot\phi)\cdot\left[\frac{S}{q}\cdot\left(3\cdot cos(\theta)^2 - 1\right) - T\cdot sin(\theta)^2\right]$
5	$W_{q\varphi}$	$-15\cdot sin(\theta)\cdot cos(\theta)^2\cdot\frac{cos(2\cdot\phi)}{q}\cdot S$
6	$W_{\theta\varphi}$	$\frac{15}{q}\cdot sin(\theta)^2\cdot S\cdot cos(\theta)\cdot cos(2\cdot\phi)$

(1-20)

The energy of the lok (3.2). Here the square of the strain tensor is integrated over the space. The volume element contains a factor q^2, But the law of winding the solution contains $1/q^2$. These factors cancel each other and simplify the integral.

$$E_{3,2} = \int_0^{\infty} \int_0^{\pi} \int_0^{2\cdot\pi} \left[\frac{L_1}{2} \left[Wqq^2 + \left(W_{\theta\theta}\right)^2 + \left(W_{\phi\phi}\right)^2 \right] + L_2 \cdot \left[\left(W_{q\theta}\right)^2 + Wq\phi^2 + W\phi\theta^2 \right] \right] \cdot \sin(\theta)\, d\phi\, d\theta\, dq$$

(1-21)

After substituting the value $W_{i,j}$ by formula (1-20), we obtain five nonzero integrals:

$$E_1 = \frac{L_1}{2} \cdot \left(\frac{80}{7} \cdot \pi\right) \cdot \int_0^{\infty} (T)^2\, dq \qquad E_2 = \frac{L_1}{2} \cdot \left(\frac{3600}{21} \cdot \pi\right) \cdot \int_0^{\infty} \left(\frac{S}{q}\right)^2 dq \qquad E_4 = \frac{20}{7} \cdot \pi \cdot L_2 \cdot \int_0^{\infty} \frac{\left(3 \cdot S^2 + 2 \cdot T^2 \cdot q^2\right)}{q^2}\, dq$$

$$E_5 = \frac{180 \cdot L_2}{7} \cdot \pi \cdot \int_0^{\infty} \left(\frac{S}{q}\right)^2 dq \qquad E_6 = \frac{240 \cdot L_2}{7} \cdot \pi \cdot \int_0^{\infty} \left(\frac{S}{q}\right)^2 dq$$

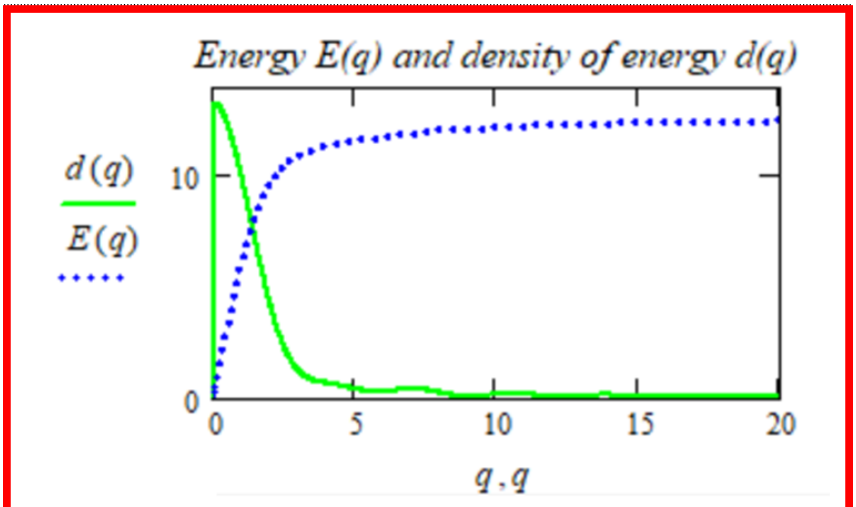
(1-22)

It turns out that all integrals are taken and equal:

$$\int_0^{\infty} T^2\, dq = \frac{1}{18} \cdot \pi \qquad \int_0^{\infty} \left(\frac{S}{q}\right)^2 dq = \frac{1}{45} \cdot \pi$$

(1-23)

Lok (3.2) does not have axial symmetry. This is seen from the formula for the displacement (1-20), it has the angular coordinate φ. The graph of radial energy distribution and energy density has the form:



$$E_{3,2} = \frac{20}{9}\cdot L_1\cdot\pi^2 + \frac{116}{63}\cdot\pi^2\cdot L_2$$

Fig.4.

As can be seen from the graph, the lok (3,2) also has a classical compaction in the center.

Lok (3.3).

Note that here q is the same as for loks (3,0), (3,1), (3,2).
Non-zero elements of the strain tensor:

1	W_{qq}	$T\cdot 15\cdot sin(\theta)^2\cdot cos(\theta)\cdot(-sin(\theta))\cdot sin(3\cdot\phi)$
2	$W_{\theta\theta}$	$15\cdot\frac{S}{q}\cdot\left(4\cdot cos(\theta)^2 - 3\cdot cos(\theta)^4 - 1\right)\cdot sin(3\cdot\phi)$
3	$W_{\varphi\varphi}$	0
4	$W_{q\theta}$	$W_{q\theta} = \frac{-15}{2}\cdot\left[\frac{S}{q}\cdot\left(3\cdot cos(\theta)^2 - 1\right) - T\cdot sin(\theta)^2\right]\cdot(sin(\theta)\cdot cos(\theta)\cdot sin(3\cdot\phi))$
5	$W_{q\varphi}$	$\frac{-45}{2}\cdot\frac{S}{q}\cdot sin(\theta)\cdot cos(\theta)^2\cdot cos(3\cdot\phi)$
6	$W_{\theta\varphi}$	$\frac{45\cdot S}{2\cdot q}\cdot sin(\theta)^2\cdot cos(\theta)\cdot cos(3\cdot\phi)$

(1-24)

The lok energy is (3.3). Here the square of the strain tensor is integrated over the space. The volume element contains a factor q^2 , But the law of winding the solution contains $1/q^2$. These factors cancel each other and simplify the integral.

$$E_{3,3} = \int_0^{\infty}\int_0^{\pi}\int_0^{2\cdot\pi}\left[\frac{L_1}{2}\left[Wqq^2 + \left(W_{\theta\theta}\right)^2 + \left(W_{\phi\phi}\right)^2\right] + L_2\cdot\left[\left(W_{q\theta}\right)^2 + Wq\phi^2 + W\phi\theta^2\right]\right]\cdot\sin(\theta)\,d\phi\,d\theta\,dq$$

(1-25)

After substituting the value $W_{i,j}$ by formula (1-20), we obtain five nonzero integrals:

$$E_1 = \frac{L_1}{2}\cdot\left(\frac{160}{7}\cdot\pi\right)\cdot\int_0^{\infty}(T)^2\,dq \qquad E_2 = \frac{L_1}{2}\cdot\left(\frac{225\cdot64}{105}\cdot\pi\right)\cdot\int_0^{\infty}\left(\frac{S}{q}\right)^2 dq \qquad E_4 = \frac{20}{7}\cdot\pi\cdot L_2\cdot\int_0^{\infty}\frac{\left(3\cdot S^2 + 2\cdot T^2\cdot q^2\right)}{q^2}\,dq$$

$$E_5 = \frac{405}{7}\cdot\pi\cdot L_2\cdot\int_0^{\infty}\left(\frac{S}{q}\right)^2 dq \qquad E_6 = \frac{540}{7}\cdot\pi\cdot L_2\cdot\int_0^{\infty}\left(\frac{S}{q}\right)^2 dq$$

(1-26)

All the integrals are taken and equal to:

$$\int_0^{\infty} T^2\,dq = \frac{1}{18}\cdot\pi \qquad \int_0^{\infty}\left(\frac{S}{q}\right)^2 dq = \frac{1}{45}\cdot\pi$$

(1-27)

Lok (3,3) does not have axial symmetry. This can be seen from the formula for the displacement (1-24), it has the angular coordinate φ. The graph of radial energy distribution and energy density has the form:

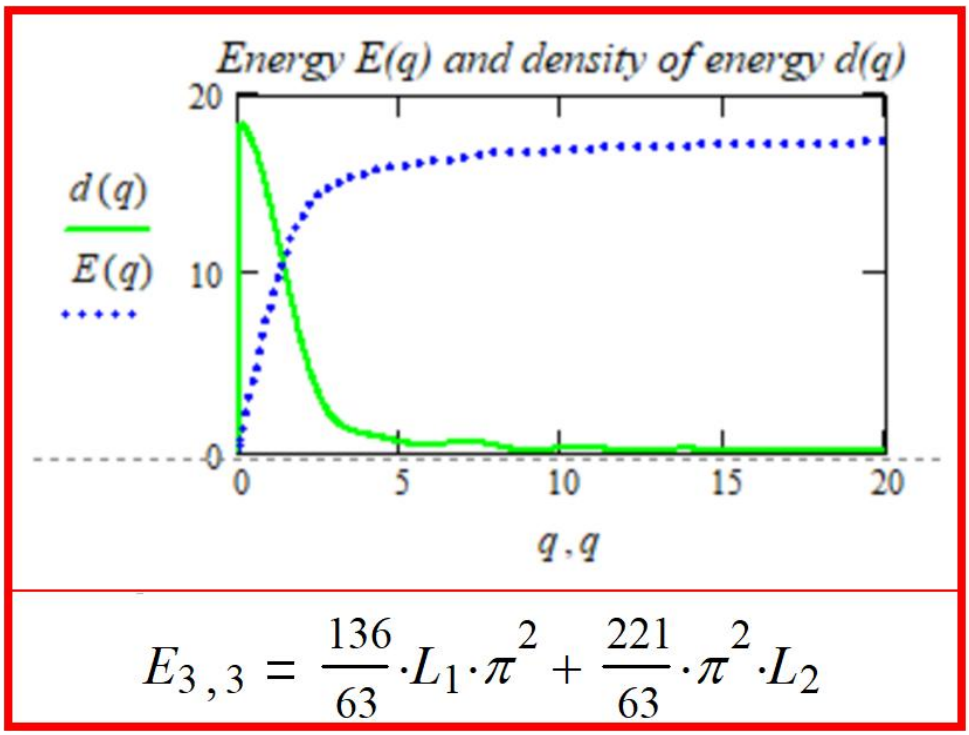


Fig.5.

As can be seen from the graph, Lok (3,3) also has a classical compaction in the center.

So, Loks (3,0), (3,1), (3,2), (3,3), and also lok (5,0) also have final energy. Large values of integer arguments create serious computer problems. Loki (2,0), (2,1), (2,2) and all Loki (4,0), (4,1), (4,2), (4,3), (4,4) have energy integrals that go to infinity. Of course, this does not mean the physical meaninglessness of these loks. Simply this means that the given solution is not physically stable and creeps into some other solutions described by other solutions (not spherical) of the wave equation.

10. Candidates for elementary particles. Portraits of elementary particles.

Abstract. The first stage of search and identification of elementary particles is made among the solutions of the wave equation. The origin of the core is explained. Portraits of elementary particles are obtained.

Portraits of elementary particles and hydrogen atoms.

The behavior of each of the previously presented functions $E(q)$ is of little interest. All of them come out of zero and with small variations asymptotically approach the total energy of the lok, determined by formulas (1-23), (1-26), (1-31). The behavior of the integrands $\rho(q)$, that is, the energy density of the lok, is of interest.

OPENING №2. It turns out that almost all randomly taken loks have a zero radial density (hole) in the center. That is, like empty balls inside or more complex figures, still empty inside. Including lok $(0,0)$ and loks with large (j,m). But loks $(1,0)$ and $(1,1)$ have solid centers, "cores". Only these two loks.

So what? Whether it is not enough what there are loks? - However, even up to this

point, there were a lot of arguments from physics in favor of the theory of gukuum ([22] - [25]). And these two last do not surprise. These loks with the core turned out to be not zero, not one and not three-ten-infinity. And exactly two. It's like winning a grand prize in the lottery.

For future historians. It was the end of February or even the beginning of March 2003. Enthusiasm after the discovery of the law of winding gradually subsided, as there were no new flashes ahead. I still did not know anything and did not open it and did not prove it. I dealt with the problem from time to time, half the time, as an amateur, especially not hoping for success. And certainly not even dreamed of some Nobel Prizes. Yes, he simply fulfilled his duty to himself (from the past, from the third year of the institute). Then, in 1974, I wanted to test the hypothesis of the Elastic Universe, but then it was not real because of the awkwardness of the formulas. So I'll check now to clear my conscience, I'll make sure that it was not serious and I'll finish it. I could easily abandon everything. The economic situation in the country was poor. Our financial situation did not allow us to spend an appreciable amount of time on science. Year 2003, the beginning, the winter, most recently came Putin and the whole economy was in decline. I did not know yet that Putin was the end of my scientific hopes. That they with Velikhov and Alferov have already come up with the "Global Energy" award. Putin ordered the academicians not to award this prize to themselves. But academics will not listen and will reward only themselves. And all competitors - mercilessly wiped from the possibility of publication. Poverty, uncertainty, instability. The program on my computer was an old version, it might not work at the singularity point or even lie, and I would gradually abandon this whole thing. Yes, the computer did not work right away, I had to go through various possibilities. I plotted the density functions of several loks from the dimensionless radius. Zero densities at zero radius for several functions were obtained. For some one, the graph at zero has gone to infinity. This departure to infinity is very grievous, because in Nature nothing goes to infinity. And consequently he foreshadowed failure. I still did not think anything and especially did not believe in the Elastic Universe. Well, I think, okay. But it is interesting, but how is that lok that the density at the zero point goes to infinity, what kind of lok does this mass get? Now, if the mass goes to infinity, then I will finish all my attempts with the Elastic Universe. The program was bad, the used computer, also obsolete, was bought in the Mitin market cheaply. Everything was considered bad and long, because there was a singularity. It was possible to calculate only a numerical example, although the program can work with formulas if there are no singularities. So, the computer gave out on the screen on a teaspoon in a minute, a stroke after a stroke, only the approximate numerical result. And gradually gave out, after 15 minutes of reflection, a dotted line leading from right to left to the Y axis, similar to the graph of the cosine function. That is, not leaving at zero to infinity, but giving an intersection with the Y axis. Well, I also looked at this chart for a few minutes, I think: it's funny how this chart for some reason did not go to infinity. Probably something mixed up with the formulas. After all, often in the process of forgetting the very purpose of the work, and working mechanically. Even, it seems somewhere retired for something. No deep conclusions, the head is half asleep. Suddenly, from somewhere in the depths of the brain, a cry, while looking at the dotted line, resting on the axis of the Y: "Lord, that's the hard middle, Kern!" Do you remember Yavorsky's handbook of the 70s? This is it you bought it in the Dolgoprudny bookstore! What do you think you're a fool about? That's it, what you dreamed about the whole previous life! And then I quickly checked a dozen of the available density distribution formulas for different Loks. The benefit of their work was a pleasant affair and I counted them and saved up a lot of them. I checked and made sure that only two formulas of them have cores. Only two, and all the rest - with holes in the middle. And these two are

not some and from where it got, namely (1,0) and (1,1), that is from the very beginning. These two - one of them is a neutron, and someone is a proton. At these moments I flew around the apartment on the wings. I was in euphoria, I felt the tides of happiness. I did not think how many disappointments I have to make these discoveries reach humanity. And how will I ruin the family in this crazy race, between the melting revenues of the family; between melting health from diabetes and from continuous sitting at the computer; and the need to bring everything to mind, to a high level, in everything, to double-check, arrange, and publish for your own money. And with it, without fail, to inform the entire scientific community, write letters to all instances, send the article to official journals. And thank you to my wife, she never peeped or roared, that I was ruining my family, squandering money and time. And silently did all the work to maintain the vitality of our family, all five. We all fed her nested dolls and we never asked or borrowed from anyone ... But with the electron turned out to be more complicated, there was a lot of loks with holes in the middle. And for some reason Lok (0,0), in spite of its obvious excretion, I did not like very much.

PROOF. Only this phenomenon, two loks with a core, is already the strongest confirmation of the correctness of the chosen path: the theory of gukuum.

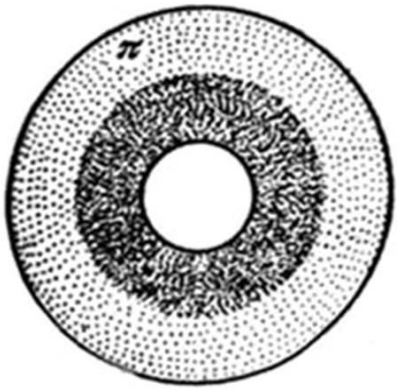
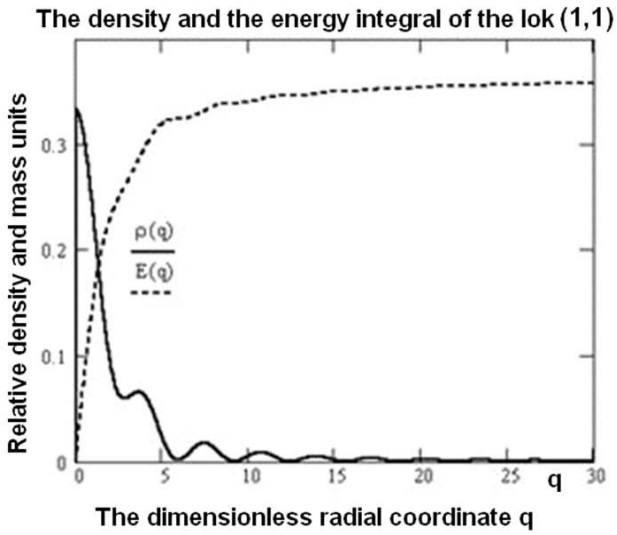
Treasures are close and breathing is becoming more frequent. I want to go to the run. It is assumed that lok (1,0) is a neutron, and lok (1,1) is a proton. Also, taking into account the simplest device, isolation from among others, it is assumed that the lok (0,0) is an electron. This empty object, close to the sphere, only the density is concentrated at the equator.

First identification: by density.

So, the first step begins to test our assumptions as to which lok is an elementary particle. The distributions of the density of elementary particles with density distributions in loks are compared.

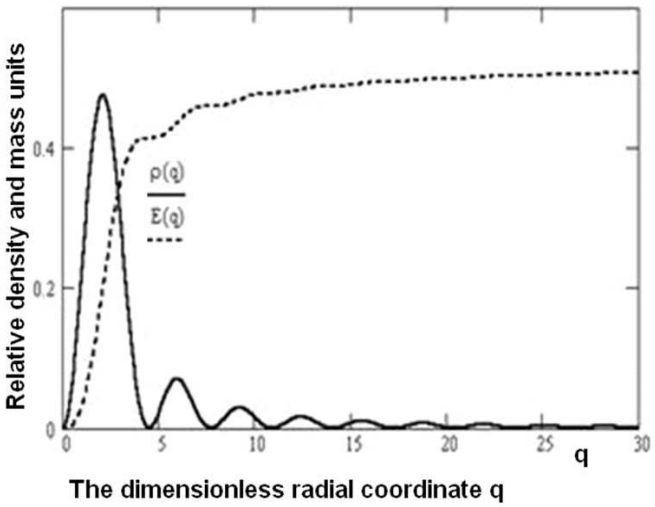
There are experimental data on the "structure of nucleons." For example, the reference book of the 1980 sample [10]. Those, fiztekhov's books, were there and left after graduation. And this directory was later bought specially in the second-hand book department. It is necessary to express huge gratitude to Mr.Yavorsky for his increased interest in the structure of elementary particles and the presentation of his knowledge in textbooks and reference books. In the 1970s, these areas of physics were completely closed all over the world. The information and graphics from this source are used below.

1. Proton candidate verification. Comparison of mass distributions.

Comparison of the experimental distribution of mass inside a proton with the theoretical found from the model of the Elastic Universe.	
EXPERIMENT	**THEORY OF GUKUUM**
 Рис. VIII.2.4.	
In Figure VIII.2.4. shown white - dense nucleus of the proton, "core". Then a dark ring, less dense - how would the charge carrier proton. And a light ring with dots - pion cloud, it is even less dense.	1) Solid line - density distribution lok (1,1) depending on distance from the center. 2) Dashed line - integral mass of lok (1,1) inside sphere of radius q. There is depending from the distance from the center.
	www.universe100.narod.ru

COMMENTS. Obviously, the graph shows the core, as well as some local elevations, which are still candidates for the charge carrier and the pion cloud. It is only necessary to compare the sizes. This will be done below.

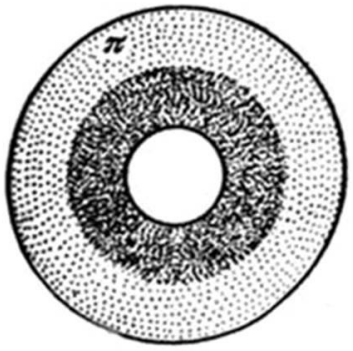
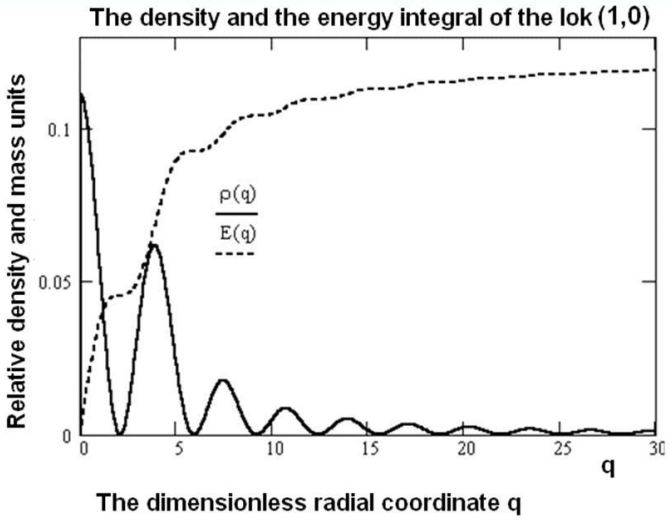
2. Check of candidate for electron. Comparison of mass distributions.

Comparison of the experimental mass distribution within the electron with the theoretical one found from the model Elastic Universe.	
EXPERIMENT	**THEORY OF GUKUUM**
It is reported that around there is system of shells, formed by pairs particles and antiparticles (pions, nucleon - antinucleons, etc.). At the same time, the "atmosphere" of the electron is more transparent, than that of a nucleon. there is grounds for believing that electron size will be significantly greater than this was considered in classical physics [10].	The density and the energy integral of the lok (0,0)  The dimensionless radial coordinate q
	1) Solid line - density distribution of lok (0,0) depending on distance from the center. 2) Dashed line - integral mass of lok (0,0) inside sphere of radius q. There is depending from the distance from the center.
	www.universe100.narod.ru

COMMENTS. There is no complete clarity with the electron, since there are no experimental data. So far, according to the theory of gukuum, it turns out that an electron is an empty tennis ball inside, covered with several layers of very soft, suede layers of a larger size. Indeed, the "atmosphere" of lok (0,0) is very transparent. Its size is large (this will be seen from the following, f.(1-56)). A good form for the formation of a hydrogen atom. Just put a tight lok (1,1) inside the lok (0,0) and the atom is ready. Also a good form for having a very large spin at such a small mass.

This graph will be needed when estimating the effective size of an electron (1-56).

3. Verification of the candidate for neutron. Comparison of the mass distribution.

Comparison of the experimental mass distribution inside the neutron with the theoretical one found from the model Elastic Universe.	
EXPERIMENT	**THEORY OF GUKUUM**
 Рис. VIII.2.4.	
It is reported that mass distribution almost the same as in a proton. Thick nucleus of the neutron, "core". Then a dark ring, less dense. And a light ring with dots - pion cloud, it is even less dense.	1) Solid line - density distribution of lok (1,0) depending on distance from the center. 2) Dashed line - integral mass of lok (1,0) inside sphere of radius q. There is depending from the distance from the center.
	www.universe100.narod.ru

COMMENTS. Indeed, it is difficult to detect experimentally the difference in the distribution of the proton and neutron masses. But according to the schedule, this difference is noticeable. The second layer of the neutron is noticeably thicker.

If you look closely at the graph on the right, then there is an assumption that a neutron is a very tight "dance" of a proton with an electron. The first maximum of the graph is like an internal proton. And in the second maximum of the chart, the electron enveloping the partner is viewed. Of course, they strongly deform when connected. The electron contracts. The mass flows partly from the proton to the electron. This dance is unstable in its free form. Perhaps because of the fact that the electron in this dance is heavily "clamped" and wants to escape from the embrace of the partner. And there is another, cooler, but much more stable dance of a proton and an electron, called the hydrogen atom. Without mutual overflow of mass.

Later. By the way, the instability of a free neutron - is this not a refutation of Coulomb's law ?!

PROOF. *The presence of three density layers for candidates for a proton and a neutron and a large electron size, which coincides with the experimental data and assumptions, is the second proof of the correctness of the theory of gukuum*.

Чтобы провести идентификацию по всем признакам, нужно научиться вычислять другие параметры локов кроме их массы. В частности, моменты импульса локов.

Portraits of electron, neutron and proton.

Of course, all the below portraits are very approximate, although the formulas allow you to make absolutely accurate portraits. But there is no time for this, as well as much more.

Electron portrait. That's how it looks like an increase of about 10^{16} times. The portrait was kindly made back in 2004 by the ninth-grader Churlaev Pasha Alexandrovich using computer 3D graphics.

These are nested spherical fragments. But in these spherical fragments the density decreases up and down along the axis of symmetry, that is, the main density is concentrated near the horizontal plane of symmetry, therefore spherical fragments are depicted here as rings. These rings reflect the electron density distribution. All rings rotate about the vertical axis at light speed. The direction of rotation of the neighboring rings is the opposite (this follows from the mathematical formula for solving the wave equation). No "separation" of layers from each other is impossible. It is strictly one whole. Although very distant layers may be detached in electrical processes, especially in electric motors, they quickly "grow back" like tails in lizards.

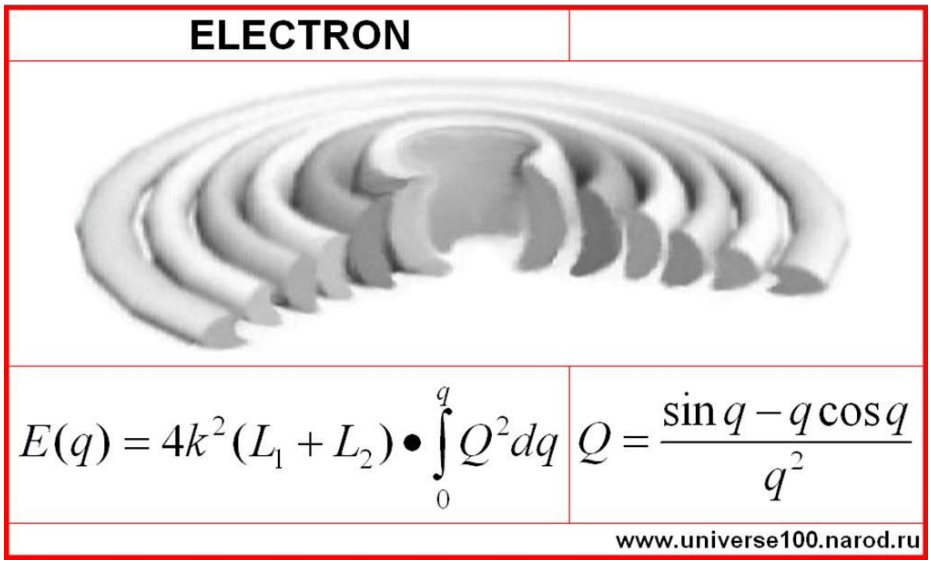


Figure 6. Portrait of electron.

Neutron portrait. This is the shape of a neutron. Geometrically, these are nested within each other. They rotate about the vertical axis Z, alternately in opposite directions, which in the sum gives a zero charge, and almost zero, but not exactly zero spin. In the center is a very massive core - the core. On linear dimensions, it is about 12 times smaller than an electron. All spheres rotate around the vertical axis at light speed. The direction of rotation of neighboring spheres is the opposite. No "separation" of layers from each other is impossible. It is strictly one whole.

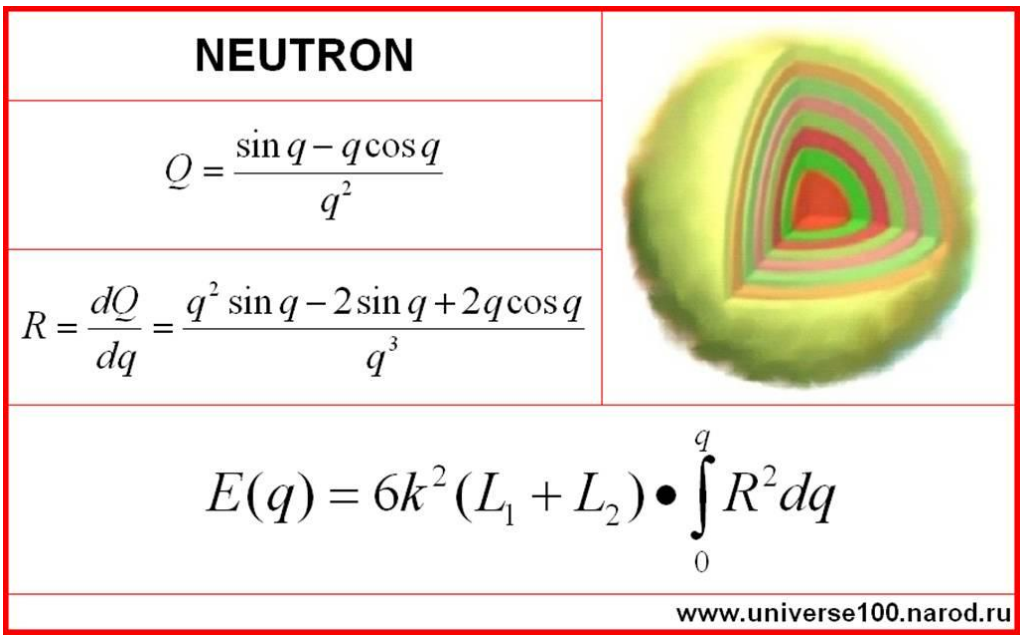


Figure 7. Portrait of neutron.

Portrait of Proton. The situation with the proton is not quite certain. Everything depends on the so far unknown ratio of the elasticity coefficients of Lame L_1 and L_2 for the gukuum. If they are equal to each other, $L_1 \approx L_2$ (as in steel, "steel Gukuum." So it seems to us, from the principle of beauty of the universe, and also because the steel is the product of Gukuum, the apple from the apple tree ...), then the portrait of the proton is close to the portrait of a neutron, only a little more (Figure 3). If $L_1 < L_2$, or more so $L_1 << L_2$, then the proton acquires a cross-like appearance, as in Fig.4. With small crosswise stretches or compressions (about 30%) along the coordinate axes. The situation when $L_1 >> L_2$, is impossible, since it would be an ether. Neighboring layers rotate in opposite directions. No "separation" of the layers from each other is possible (as in a neutron). It is strictly one whole.

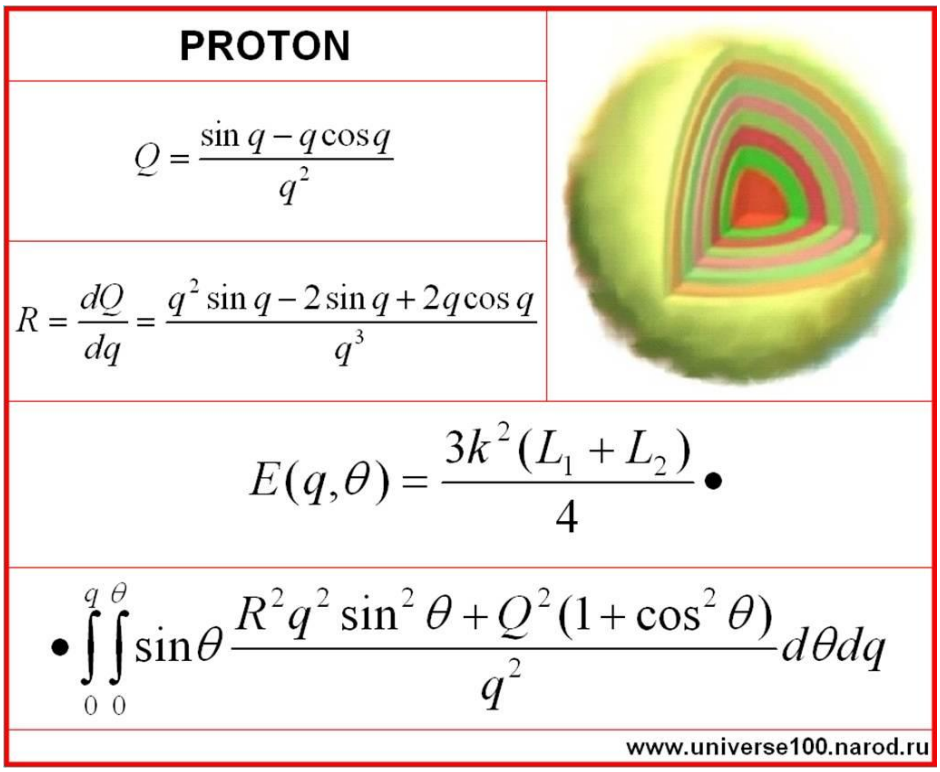


Figure 8. Portrait of proton.

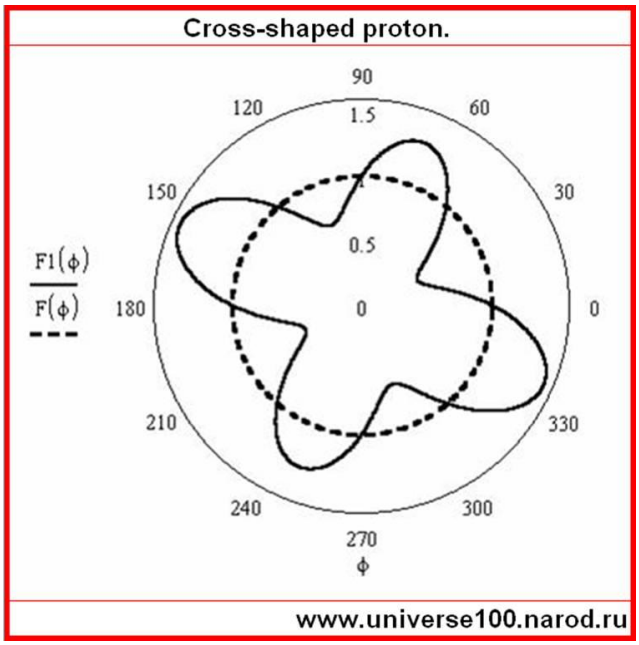
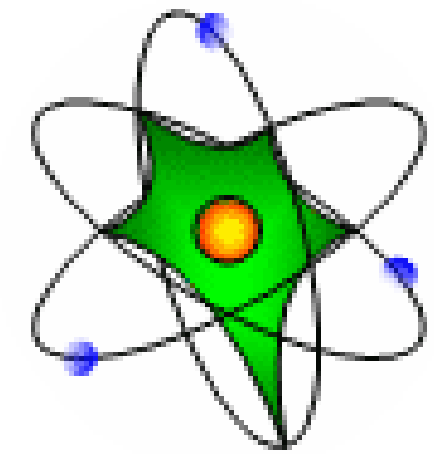


Figure 9. Any possible section of proton if $L_1 << L_2$.

A portrait of the hydrogen atom. Traditionally, everyone thinks that an electron must revolve around a proton. Nothing like this. Here is an image of the atom, popular from ancient times:



- there is a complete non-correspondence of reality. From now on and forever: electrons as a whole do not revolve around the nucleus. In any atom, the nucleus is inside many electronic clouds, which are actually material electrons, and not virtual objects.

Explanations. Inside, in the middle, a little yellow is a proton. Around him is a large, but very rarefied - electron. And the electron as a whole does not revolve around the proton, but simply itself is a localized wave object.

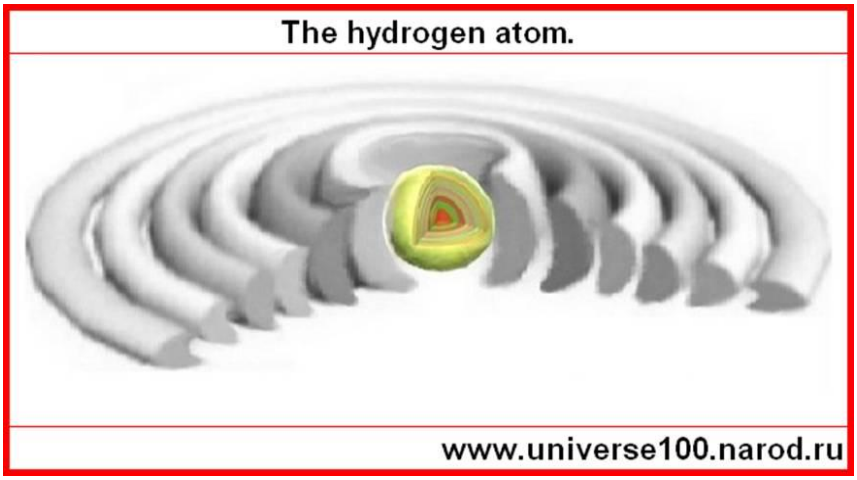


Figure 10. Portrait of hydrogen.

Below: pages from the Yavorsky reference book from 1980. I used in the students an even earlier edition, it also had a core for nucleons. In later editions, this information is destroyed.

реакции (*) п. 8° процесс будет происходить по схеме:

$$^{0}_{0}\nu_{\mu} + {}^{1}_{0}n \to {}^{1}_{1}p + \mu^{-},$$

где μ^{-} — отрицательный мюон. Этим доказывается различие электронных и мезонных нейтрино (и антинейтрино).

§ VIII.2.6. Понятие о структуре нуклона

1°. *Под структурой нуклона* (и любой элементарной частицы) понимается ее протяженность в пространстве и строение. Структура любой элементарной частицы не может рассматриваться изолированно. Она связана со структурой и свойствами других частиц. Прямые эксперименты по изучению структуры проведены только для нуклонов *). Эффективными путями изучения структуры

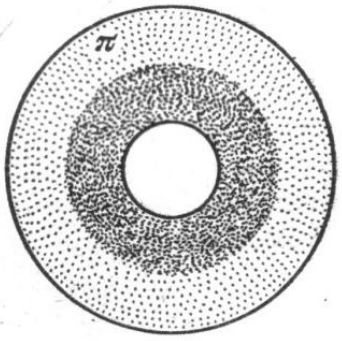


Рис. VIII.2.4.

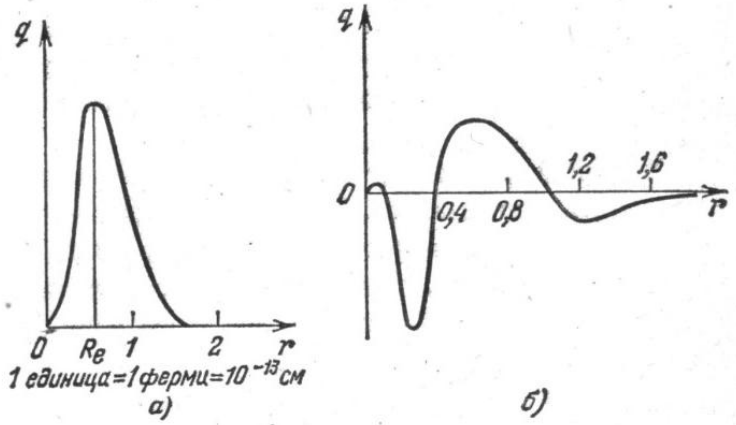


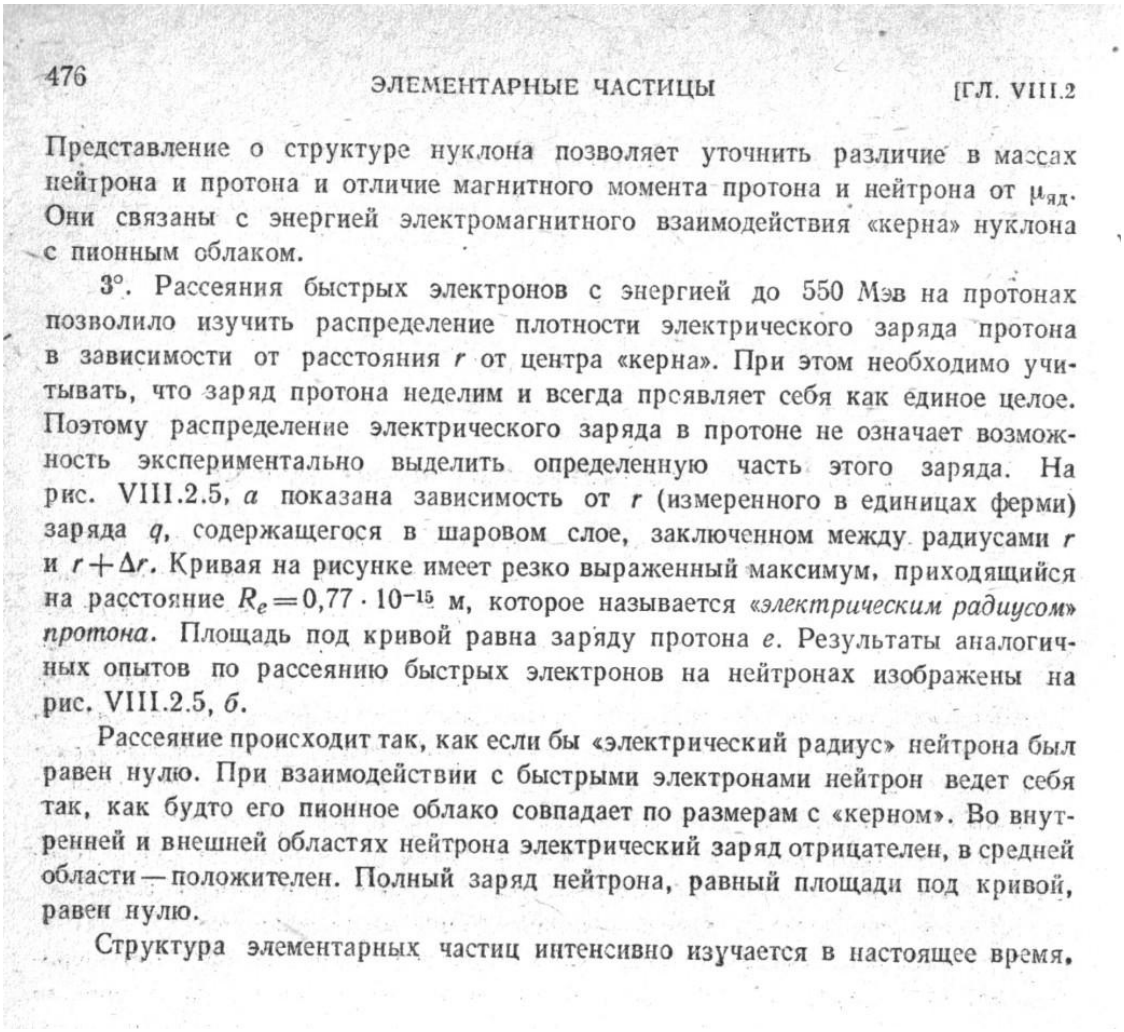
Рис. VIII.2.5.

нуклонов являются упругие столкновения пионов с протонами и упругие столкновения быстрых электронов с протонами и нейтронами. Первый метод показал, что пион незначительно отклоняется при столкновении от своего первоначального направления, а протон получает незначительную отдачу, так что переданный протону импульс Δp невелик. Из соотношения неопределенностей (VI.1.6.2°) следует, что процесс столкновения пиона с протоном происходит в некоторой области пространства с линейными размерами $a \geqslant \hbar/\Delta p$, где a характеризует размеры нуклона.

2°. В нуклоне непрерывно происходят процессы испускания и поглощения частиц и античастиц. Нуклон рассматривается как сложная, изменяющаяся во времени совокупность многих частиц.

В центральной части нуклона («голый нуклон») находится ядро («керн») нуклона с радиусом $(0{,}2 \div 0{,}4) \cdot 10^{-15}$ м. В этой области особая, еще не вполне ясная роль принадлежит тяжелым частицам — резонансам и парам нуклон — антинуклон. Внешнюю часть нуклона образует пионное облако (рис. VIII.2.4).

*) Проблема структуры элементарных частиц, а также попытки установить некоторые фундаментальные частицы, из которых построены все остальные, являются «передним краем» физики высоких энергий. В данной книге приводятся лишь самые общие сведения о структуре нуклона.



476 ЭЛЕМЕНТАРНЫЕ ЧАСТИЦЫ [ГЛ. VIII.2

Представление о структуре нуклона позволяет уточнить различие в массах нейтрона и протона и отличие магнитного момента протона и нейтрона от $\mu_{яд}$. Они связаны с энергией электромагнитного взаимодействия «керна» нуклона с пионным облаком.

3°. Рассеяния быстрых электронов с энергией до 550 Мэв на протонах позволило изучить распределение плотности электрического заряда протона в зависимости от расстояния r от центра «керна». При этом необходимо учитывать, что заряд протона неделим и всегда проявляет себя как единое целое. Поэтому распределение электрического заряда в протоне не означает возможность экспериментально выделить определенную часть этого заряда. На рис. VIII.2.5, *а* показана зависимость от r (измеренного в единицах ферми) заряда q, содержащегося в шаровом слое, заключенном между радиусами r и $r+\Delta r$. Кривая на рисунке имеет резко выраженный максимум, приходящийся на расстояние $R_e = 0{,}77 \cdot 10^{-15}$ м, которое называется *«электрическим радиусом» протона*. Площадь под кривой равна заряду протона e. Результаты аналогичных опытов по рассеянию быстрых электронов на нейтронах изображены на рис. VIII.2.5, *б*.

Рассеяние происходит так, как если бы «электрический радиус» нейтрона был равен нулю. При взаимодействии с быстрыми электронами нейтрон ведет себя так, как будто его пионное облако совпадает по размерам с «керном». Во внутренней и внешней областях нейтрона электрический заряд отрицателен, в средней области — положителен. Полный заряд нейтрона, равный площади под кривой, равен нулю.

Структура элементарных частиц интенсивно изучается в настоящее время.

Опубликовано:
https://www.academia.edu/34505364/Candidates_for_elementary_particles._Portraits_of_elementary_particles

11. Photon, radio waves, neutrinos.

Published: http://vixra.org/abs/1803.0690

https://www.academia.edu/36275759/Photon._Shape_internal_arrangement_and_physical_properties

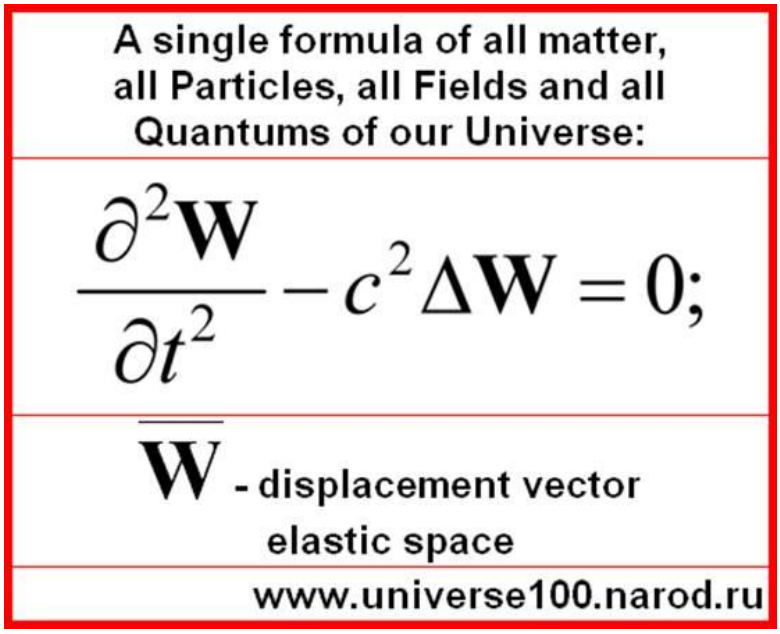
https://www.academia.edu/36275775/Photon._Shape_internal_arrangement_and_physical_properties

Old rezults.

Abstract. Several formulas are obtained describing objects moving at the speed of light. These formulas are particular solutions of the wave equation, in spherical and cylindrical coordinates. Conclusions about the belonging of these solutions to photons or neutrinos or radio waves have not yet been made.

The initial equations.

So, let us recall the chapter on the varieties of solutions of the wave equation. Again a single formula of all matter, all Particles, all Fields and all Quantums of our Universe:

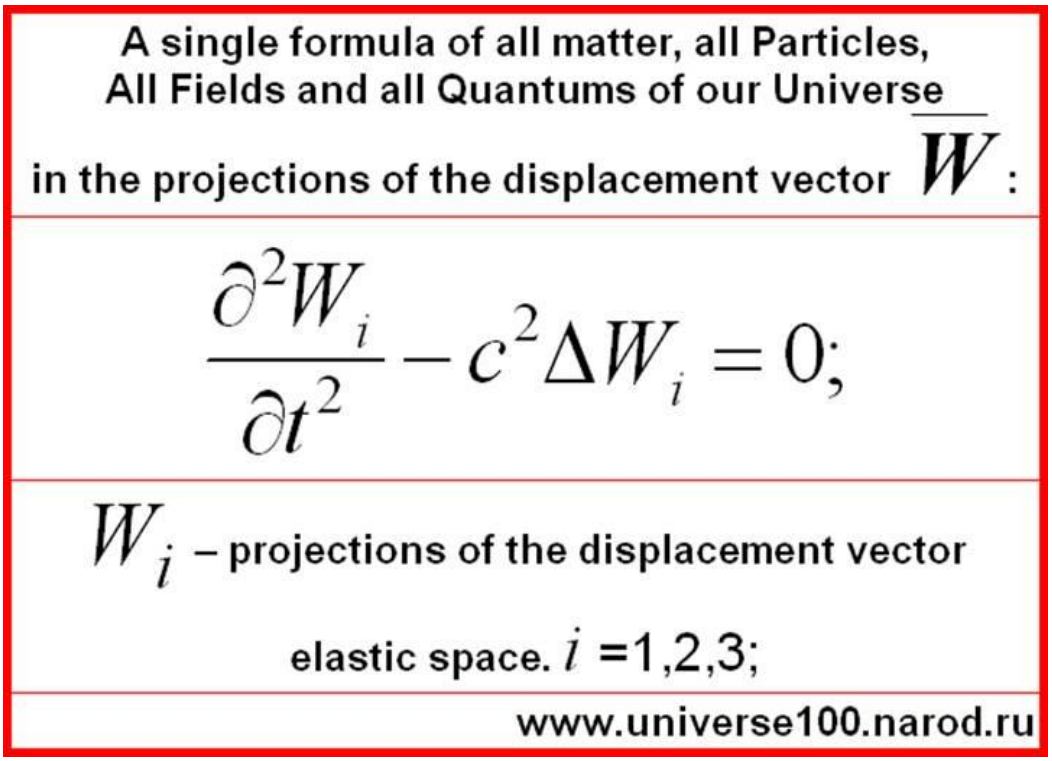


(5-0)

Here, $\mathbf{W}$ is the displacement vector of the elastic cosmic gukuum element. C is the speed of light or the velocity of transverse waves, determined by the mechanical parameters of the gukuum. Longitudinal waves are not considered.

We start from absolutely reliable ([10]) results: solutions of the wave equation for displacement, and also physical formulas for an elastic body.

The same equation (5-0), the Uniform formula of all matter, of all Particles, of all Fields and all Quanta of our Universe, but expressed in the Cartesian coordinates of the projections W_i of the displacement vector $\mathbf{W}$:



(5-1) ≡ (5-0)

W_i is the projection of the displacement vector of the elastic space.

Different types of solutions of equation (5-1) correspond to different types of oscillatory processes. In particular,

a) waves propagating to infinity at the speed of light,

b) waves localized, standing, vortex. Etc.

And these kinds of solutions are not exhausted. It is very likely that some types of localized solutions can also propagate to infinity at a speed close to the speed of light. And it is very likely that many waves propagating to infinity have a localized structure. All these kinds of oscillations really exist in the Elastic Universe, creating a visible variety of material objects.

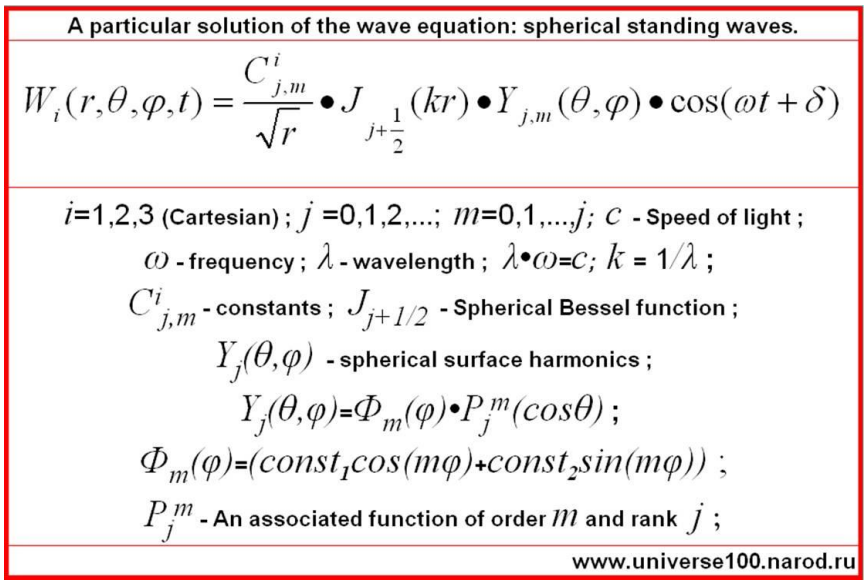
More later. There is an assumption that in general all material objects existing in our perception are localized. Including electromagnetic waves.

Definition. One of the solutions of equation (5-1) is a localized wave. This is a vortex-shaped wave object localized in space - a field of stresses in Gukuum. The main solution of the wave equation, which is used in the theory of gukuum to describe localized waves, is the sinusoidal spherical standing waves.

We work in spherical coordinates:

$$x=r\cdot\sin\theta\cdot\cos\varphi,\ \ y=r\cdot\sin\theta\cdot\sin\varphi,\ \ z=r\cdot\cos\varphi \qquad (5\text{-}2)$$

A particular solution of the wave equation, spherical standing waves:



(5-3)

k is the wave number. i=1,2,3 (Cartesian); j,m=0,1,2, ...; C_j, are arbitrary; $\omega = c \bullet k$; c is the speed of light.

True, a preliminary check shows that formally the energy integral over the given formula does not converge. But as we have seen before, you can not simply formally integrate. Necessarily somewhere there will be "winding", which must be taken into account. This check will have to be done better in the future.

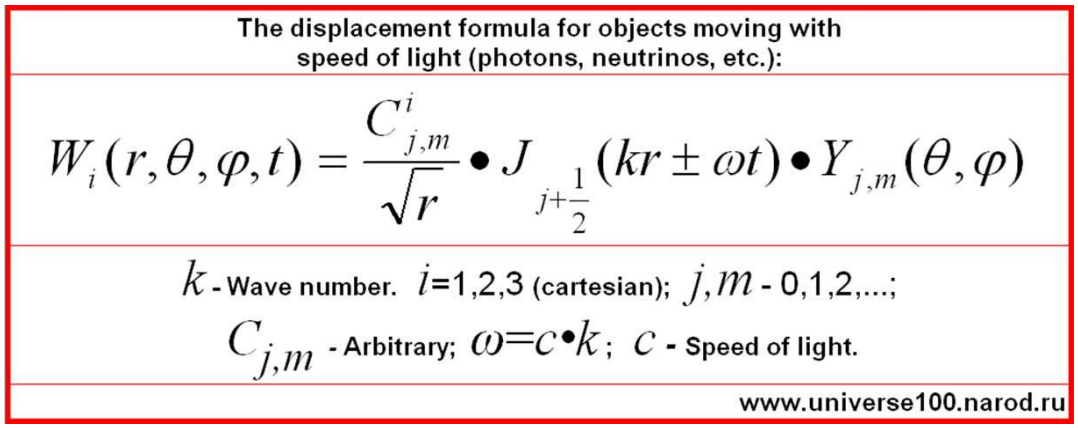
The following reasoning may apply. At the time of formation, the shape of the photons is far from the formula described above. Then, during the flight, they gradually relax to a normal form and all this occurs in motion at light speed. That is, the photon is already in the process of flying gradually grows this "divergent as an integral tail." This tail, despite the fundamental infinity of its energy in infinite time, remains at any finite time not too large in percentage to the energy of the photon center.

It is also possible that one has to take into account the cosmic background.

Objects in cylindrical coordinates. They too can be moving.

Class 4 (optional). A similar situation with an even lightning. We work in cylindrical coordinates:

$$x = \rho \cdot \cos\varphi, \quad y = \rho \cdot \sin\varphi, \quad z = z \ ; \qquad (5\text{-}16)$$



(5-10)

k is the wave number. i=1,2,3 (Cartesian); j,m=0,1,2, ...; C_j, are arbitrary; $\omega = c \bullet k$; c is the speed of light.

True, a preliminary check shows that formally the energy integral over the given formula does not converge. But as we have seen before, you can not simply formally integrate. Necessarily somewhere there will be "winding", which must be taken into account. This check will have to be done better in the future.

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It is also possible that one has to take into account the cosmic background.

Objects in cylindrical coordinates. They too can be moving.

Class 4 (optional). A similar situation with an even lightning. We work in cylindrical coordinates:

$$x = \rho \cdot \cos\varphi, \quad y = \rho \cdot \sin\varphi, \quad z = z\ ; \quad (5\text{-}16)$$

The hypothetical formula for objects of the type lightning (in cylindrical coordinates):

$$W_i(\rho,z,\varphi,t) = c_i e^{\mu i k z} \bullet Z_m(\rho\sqrt{k^2+K^2}) \bullet$$

$$\bullet (a\cos m\varphi + b\sin m\varphi) \bullet \cos(\omega t + \gamma)$$

This solution should be mathematically a kind of endless garland of sausages along the Z axis.

Here $\overline{W}$ – displacement vector of the elastic element space gukuum. i=1,2,3 (cartesian); m - integer; c_i, γ, k, K - arbitrary; $\omega = c \bullet k$; c - Speed of light. Z_m - Arbitrary Cylindrical Bessel functions of the first kind. These are sinusoidal cylindrical waves.

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(5-17)

This solution mathematically should be a kind of endless garland of sausages along the Z axis. And if it is physically feasible, then it is very likely that this object will turn out to be an Anniversary Lightning. Some analysis of this decision is made, here it is not given. The energy integrals converge (in terms of one sausage). But we postpone it for the future.

In addition to the cylindrical solution, one can certainly perform work as well as over a spherical solution. That is, similarly to find those three types of solutions, and the corresponding objects that generate the solution of the wave equation in cylindrical coordinates. In a cylindrical solution, you can use variables $(z\pm\omega t)$ и $(\rho\pm\omega t)$:

Hypothetical formula for objects moving along the Z axis: (in cylindrical coordinates):

$$W(\rho,z,\varphi,t) = c e^{\mu i k(z\pm\omega t)} \bullet Z_m(\rho\sqrt{k^2+K^2}) \bullet (a\cos m\varphi + b\sin m\varphi)$$

These are sinusoidal waves running along the Z axis.

Here $\overline{W}$ – displacement vector of the elastic element of the space gukuum. i=1,2,3 (cartesian); m - integer; c_i, γ, k, K - arbitrary; $\omega = c \bullet k$; c - Speed of light. Z_m - Arbitrary Cylindrical Bessel functions of the first kind.

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And

The hypothetical formula of cylindrical waves diverging from the Z axis:
(in cylindrical coordinates):

$$W(\rho,z,\varphi,t) = ce^{\mu ikz} \bullet Z_m[(\rho \pm \omega t)\sqrt{k^2 + K^2}\,] \bullet (a\cos m\varphi + b\sin m\varphi)$$

These are fading cylindrical waves leaving the Z axis.

Here $\overline{W}$ – displacement vector of the elastic element of the space gukuum.

i=1,2,3 (cartesian); m - integer; c_i, γ, k, K - arbitrary;

$\omega = c \bullet k$; c - Speed of light. Z_m - Arbitrary

Cylindrical Bessel functions of the first kind.

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What is the physical meaning of the formula, while we do not guess. Where is the photons, where the neutrino, where other objects moving at the speed of light. This is something for the future.

Processes in which photons are born.

Based on physical considerations and common sense, it can be assumed as follows.
1) There are various processes which produce photons or neutrino. And photons and neutrinos are produced each time different (at the initial time) on the properties and shape. And not just photons and neutrinos, but there may be other particles, even not yet known. Examples of such processes include:
- The annihilation of particle-antiparticle when "straightened" once all the turns of the localized wave formations (t.e.chastits). In the chapter about antimatter meaning of this phrase is the refined.
- transition of an electron in an atom from one level to the other, when, figuratively speaking, to "straighten" the individual windings of the localized wave formations (t.e.chastits). This number can "straighten" the turns of some temporary, transient states of particles. This is a subject for future research.
- Fluctuations in the electric current in the radiating antennas when photons generated electromagnetic field.
- interaction with high-energy particle radiation neutrinos and other objects.
- The collapse of the short-lived particles.
2) The photons may have a different shape with their education. Thus, photons generated at the intra annihilation processes or may be highly compact and unidirectional movement. But photons of radio range can be spherically propagating, with rapidly decreasing intensity. What we are seeing every day on the telephone and radio communications. The possibility of other forms will be set today's younger generation of scientists.
3) Considering that the photons arising in the processes of annihilation are formed by "straightening" localized rotating wave layers, it is possible that the resultant sum of the amplitude of the oscillations amplitudes layers which alternate in the rotational direction. You've got to think these multidirectional layers - they are composed with each other and then fly in one direction, or just fly in different directions ?! Yes, actually, and antiparticles are in need of serious mental analysis. And suddenly, the collision of particles with antiparticles, all the "positive direction" (in the sense of rotation of right-hand rule) of the layers of the two particles fly in one direction and the "negative direction" of two particles fly to the other side? Or they are first added together with each other, and then each amount of flying in different directions?
4) Given that photons generated in the annihilation processes are formed by "straightening" localized rotating wave layers that decrease (in amplitude) to the number (the distance from the rotational axis), it can be assumed that sometimes, and perhaps

always Photons have peletona wave form, the amplitude of oscillation which is distributed (at considerable distances) Tipo approximately like $1/r$, where r - distance from the "core" of the photon. Like this. Here sits the wave and corpuscular nature of the photon.

5) Photon, unlike the elementary particles is not something straightforward, repeatable and stable. Each photon has a date of birth and date of death - when he was discovered. The range of possible continuous and photon energy depends on the difference in the energies of interacting particles or energy levels.

Someone on the forum asked the question, that's a photon flies away from us into the black infinity of space. And it is now, no one will ever see. So he is or he is gone? And do not fly away so if all the photons? The answer is. At this point of infinity from some other place arrives the same photon, so we worry about. Equilibrium in an infinite universe established in all previous negative - her endless story. And there is a photon or it is not in any point of space we do not know until it is not detectable. But as soon as we find it, then it has not.

6) Neutrinos, in all probability, are also a form of the same class of objects. It is unknown what their common (except for the velocity of propagation), and what is the difference between them. It will also set the current generation of young scientists.

Redshift. Hypothesis.

At the time of formation of the shape of photons is very far from the above described formula. Further photons during filter may gradually relax to a normal manner. That is, a photon is already in the process of flight gradually grows some tail, which is becoming longer and longer. This tail, despite the fundamental infinity of his power in an infinite time, for any finite time is still not too great a percentage of the photon energy of the center. Ie photons in all the flight left with the ultimate initially given energy. In addition, if the energy for regrowth of the tail is taken near the photon, the energy of the central part of the photon decreases slowly. It is possible that this phenomenon, the spreading of a photon in flight,

Balance in the universe.

Well, if the inverse collision processes photons exist and turning them over to the elementary particles? - Probably, yes. Definitely yes. This is the universal mobile equilibrium. These photons will sooner or later face well (again, perhaps in triple collisions with neutrinos and other particles, albeit rarely, one universe and does not hurry).

Thus the process and equilibrium is realized between the number of photons and the number of neutrons in the whole universe. (See chap. About black holes). One has only to perenakopitsya neutrons as they begin to thicken around some centers to shrink into a black hole. But, alas, this was not destined to be. For they mostly burn up and turn into photons. Who will fly aimlessly around the universe and again somewhere one day face, forming a pair of neutrons.

2 . The new results.

Photon. The shape and internal structure.

Abstract. An attempt to explain the theoretical photon properties from the perspective of the theory of elasticity of the universe.

We see the photons, the photons know, we know the action of photons, we know the properties of photons, we know the duality wave-particle nature of the photons. Not only we know one thing: it looks like a photon under strong microscope. Now we will try to do it.

First, an example of acoustics. Imagine that we are in a sound wave, and move with it. Modern technology makes it possible to portray the sound wave on the equalizer:

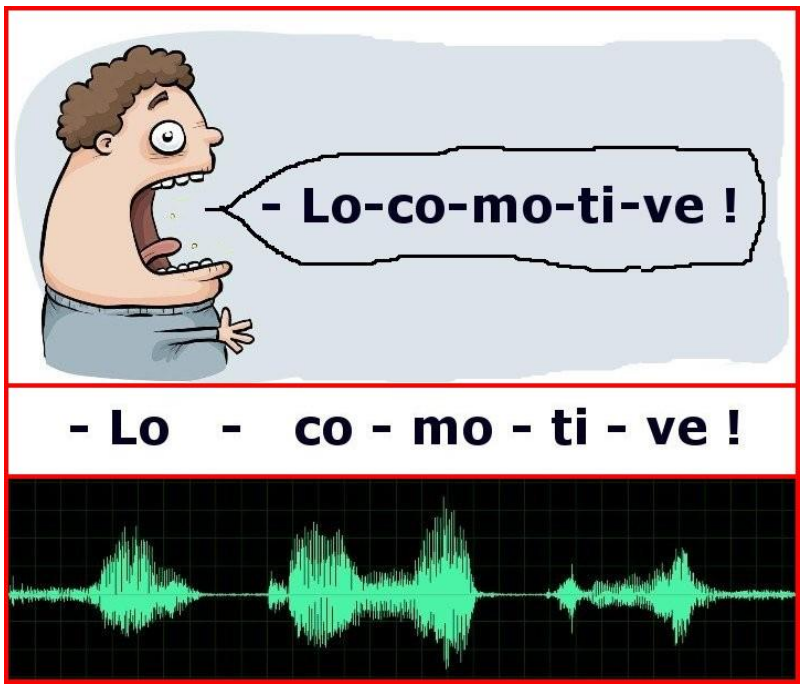


Fig.1.

Let's imagine that we can see the differences in the density of the air in the sound. And here we are flying along with the sound wave, the speed of sound and see the sound wave, all its fluctuations, much like in the picture above. Assume at this point every reader imagines a picture of the way he understands the whole process. To the best of my scientific training.

What we see in the course of the flight, along with the sound? - We see a picture of a stationary sound. We, together with the sound of flying over the forests, fields, houses, cities, bridges. Around me landscapes. But the surrounding vicinity have a sound wave picture does not change. Well, except that the sound decays with time, ie paint soundscapes become washed-out and gradually fade. But the picture of the sound around us is stable and unchangeable. We do not see around him are no fluctuations in the density of the air. We can see the air compression, resolution, see them undulating. Just like in the picture above. But we do not see around no hesitation. All sound travels as a unit.

From the household perspective, if we shouted for example, the word « Locomotive » (Figure 1), it is displayed on the equalizer as some vibrational field. And then, whenever and wherever we listened to the sound after 1 second or 30 seconds, it will be one and the same word « Locomotive ». Although the volume will decrease over time.

The theory of wave propagation in three dimensional elastic medium, which we offer textbooks, said that if the initial state was localized disturbance, the further it spreads as a spherical wave. Moreover, with a sharply marked beginning and end without "aftereffects" (i.e., without damping, in contrast to the plane waves).

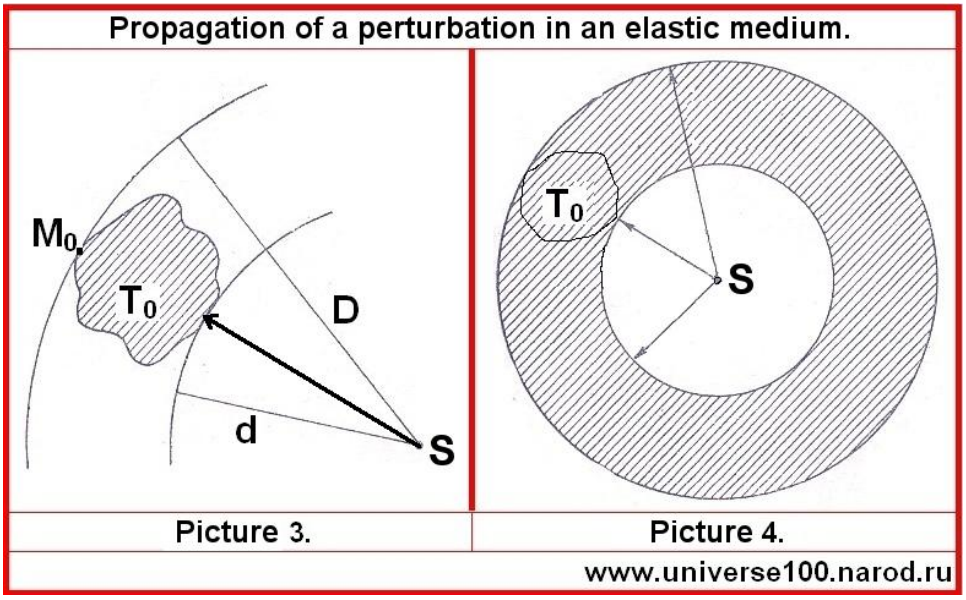


Fig.2.

The classic presentation of propagation of the initial perturbation $of\ T_0$ is illustrated in Figures 3 and 4. It should not be too penetrate into all of the notation. That is: 1) First, the initial perturbation $of\ T_0$ (Figure 3) does not reach the point M_0, and at this point there is no perturbation. 2) then the initial disturbance reaches point M_0, and at this point there is a perturbation. 3) After a time, to the point M_0 comes already trailing edge of the initial disturbance and at this moment point M_0

disturbance ceases completely. This part of the statement is sufficiently convincing.

Next, it is judged that the initial perturbation disposed in T_0 will necessarily distributed spherical manner (Figure 4), decreasing in intensity, and the like over time crosses every point in space in the future.

About the same theory tells us about the one-dimensional wave equation. Instead of a three-dimensional model of the disturbance spread, shown in Fig. 3 , 4, we have a one-dimensional model. This model is described by the one-dimensional wave equation.

$$W_{tt} - c^2 W = 0 \qquad (1\text{-}1)$$

where $W = W(x, t)$ - offset in the point of the medium, with - the velocity of light. As is known, the solution of the one-dimensional wave equation retains its original shape when moving. The solution of one-dimensional wave equation is of the form:

$$W(x, t) = f_1(x - ct) + f_2(x + ct) \qquad (1\text{-}2)$$

where f_1 and f_2 are determined by the initial conditions, and f_1 refers to one of two flying object, and f_2 belongs to the second object.

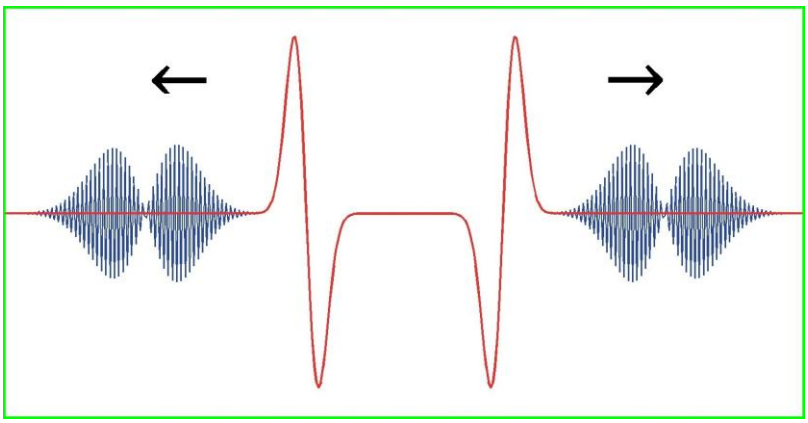


Figure 5.

As its decision to the one-dimensional wave equation, the objects are produced in pairs. It is observed in the three-dimensional physics. photons are often produced in pairs. This is the root of such legends as entanglement of photons. No confusion there. But a pair of photons flying in different directions exist.

What is the conclusion from all the done considerations? The conclusion is that if we are in the frame of reference of a moving wave of the object, whether it is a one-dimensional or three-dimensional, we see around the steady-state strain (or stress) environment. No hesitation in time! Here are falling drops of water from the tap water can fluctuate in the course of the flight. And if we are sitting in a drop, and if a drop of flying for a long time, we will see how our drop during flight changes its shape. Drop vibrational changes its shape. But if we sit inside the sonic wave or within a one-dimensional waves propagating in the inside or gukuume (= in space) electromagnetic disturbance, no oscillations around itself, we will not see.

Now we are theoretically prepared to understand what a photon. Photon - a disturbance in gukuume which propagates at a rate determined Gukuum properties. That is the speed of light. In the process of moving the photon exactly it keeps its shape. But what is this form? Here again the analogy of the sound of the world (Figure 1). When we shouted the word « Locomotive » electromagnetically, this word and this will spread in space. That is, will remain waveform Fig.1. Similarly, photons!

The form of photons determined by the process of birth.

Photons - it is like the sound of speech in gukuume flying in space. They can be displayed on the spatial equalizer. They fly from the distant or recent past, and carry information about the process of its creation.

How to generate a photon? Process very much.

1. The most common. electron transition within the molecule at a lower energy level of the radiation quantum (photon =).
2. Collisions of particles with an energy change. The laws of conservation of momentum and energy demand more of a single particle, and the particle is a photon.
3. Nuclear reactions.
4. Process annihilation particles. gif:

http://i.yapx.ru/BDq5J.gif
http://universe100.narod.ru/u270/b15.gif
http://universe100.narod.ru/u210/image017.gif

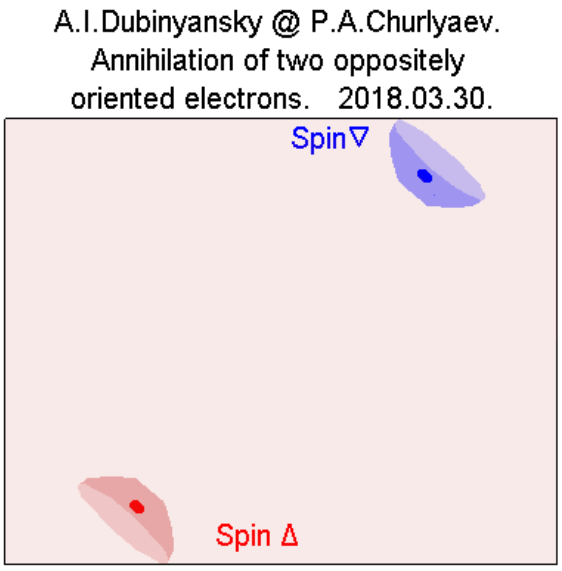


Figure 6.

As can be seen from these processes, they are all fast, all have a beginning and an end, they all have a clear time limit and energy. For this reason, all the photons have the energy and clear form.

We do not yet vdaomsya in strict SUMMARY antimatter on elastic theory of the universe. The working model is this: faced two elementary particles "head-on", one of which, according to the rule of thumb is twisted in one direction, and the second - in the other. What is the process of collision? This process consists in that the vortex, swirl localized waves of each of these two wave vortices rotating in opposite directions, suddenly react, "straightened" and all of their circular movement is converted into linear. Almost instantly. Formed two photons that scatter strictly on the same line in different directions. And almost all of these photons is polarized in one direction,

In accordance with the process of annihilation photons shape created in this process it is approximately as follows if we consider only the electric or magnetic component only photon:

Gif image: http://i.yapx.ru/BJWTe.gif
http://universe100.narod.ru/u210/Photon-01.gif

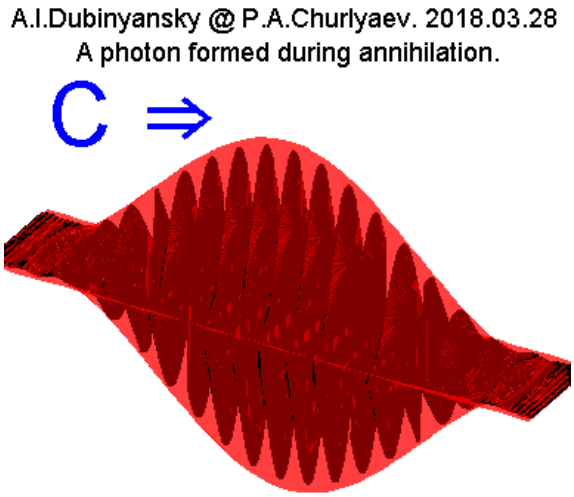


Figure 7.

That is, there is a growth area and the area of electrical or magnetic components of the amplitude attenuation. By its thickness such photons resulting from the annihilation

of the electrons, apparently just order electrons diameters. All other parameters are also quite specific.

With the image and of the magnetic and electric component, photon looks like this:

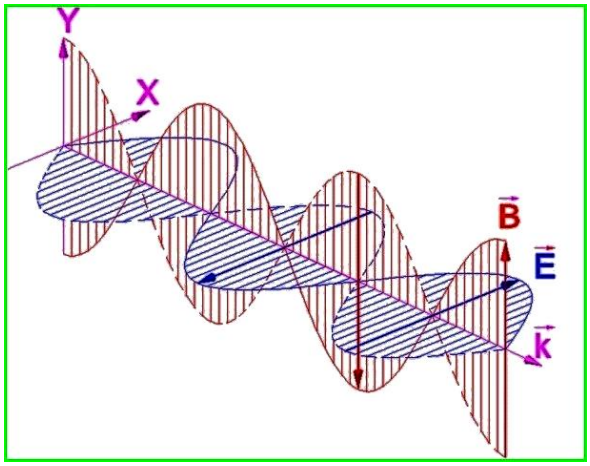


Figure 8.

Photons can not be considered by some as flat Fig.6 or consisting of the two planes both in Fig.8. Photon - a figure, and volumetric smooth over the entire space. However, there are areas in which are implemented the maximum amount of electric or magnetic component and directions perpendicular to them, where these values are minimum.

Depending on the process of its creation, or external influences on the photon when the span over some medium, may be obtained and such photons:

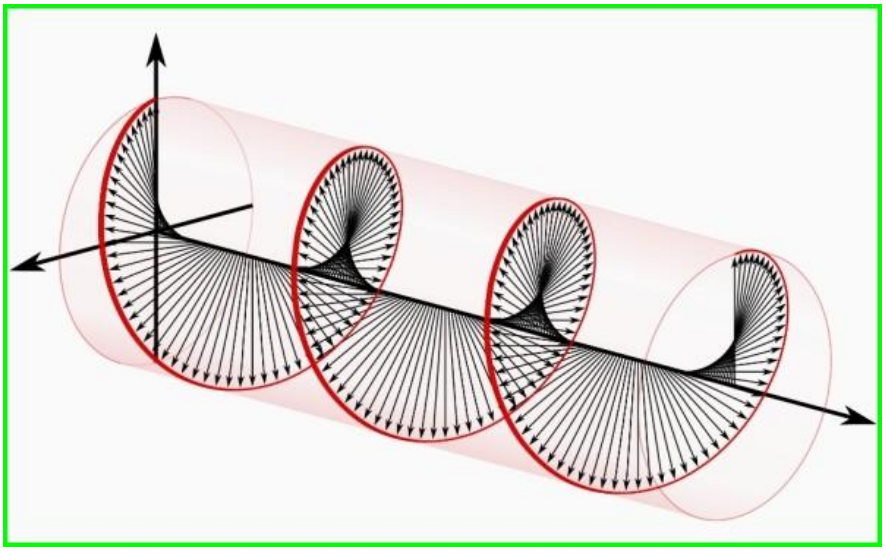


Figure 9.

But this again does not mean that that's such a photon flies and spirally twisted. Not. He flies without changing the shape and orientation. But at the time of registration, at the time of its passage through some medium through the detector, it exhibits similar properties twisted.

FORM photons does not change during the journey.

Regarding the speed of a photon. All fragments photon move in the same direction, have no transverse vibrations and movements. For this reason, the speed of the entire object = photon identical and equal to the speed of light.

About the mass of the photon. From a comparison of photon described herein with wave vortices, it is seen that the photons are not singularities in the density of points. That is, do not have mass education centers. Therefore, they have no rest mass. They do not have a strict and uniform spatial form. Each photon is different, has its own form,

the energy has the date and place of birth, a parent process, in which he was born. You can enter the classification of the formation of photons and call this classification "nationality" of a photon. This will facilitate memorization.

It should be remembered "Dubinyanskogo field." Electric and magnetic fields of the photon does not exhaust all the fields in the cosmos, including the photon. After displacement Gukuum has three dimensions. Therefore, it is quite possible that the photon has a third component of the field, in the direction of its movement. Apparently, this field is longitudinal, quickly fading with distance. Since the longitudinal waves have a higher velocity than the transverse, and since it attenuated with distance, the field in the photon Dubinyanskogo quietly flies together with a photon. However, this is a field in some experiments can detect themselves. For example, in experiments of the Aharonov-Bohm effect.

About previously put forward our formulas for the photon or neutrino, they were a little correspond to reality. No-one formula is not a photon. However, there are certain classification processes in which photons are generated. And this classification creates a certain number of types of form of photons.

About wave or corpuscular properties of a photon. It depends on the process in which the photon is involved. If this process is the exchange of energy, the photon behaves like a particle. However, if the photon flies through the narrow gap, the width of which is comparable with the size of a photon, the photon form begins to appear, which has the form of waves (Figure 5). Accordingly, the properties become photon wave.

About neutrinos. In fact it is one of the varieties of photons of specific energies and forms, allowing to penetrate physical objects. Arise in specific processes. Since neutrinos arise in specific processes, perhaps they have enough specific form. For each process, the shape of the neutrino must be installed separately.

12. Angular moments (spins) of wave vortices (loks). Refinements.

Опубликовано:
https://www.academia.edu/34522333/The_angular_momentum_of_the_lok

Уточнение:
https://www.academia.edu/35952051/Angular_moments_spins_of_wave_vortices_loks_._Refinements

Обсуждение:
https://www.academia.edu/35952030/Angular_moments_spins_of_wave_vortices_loks_._Refinements

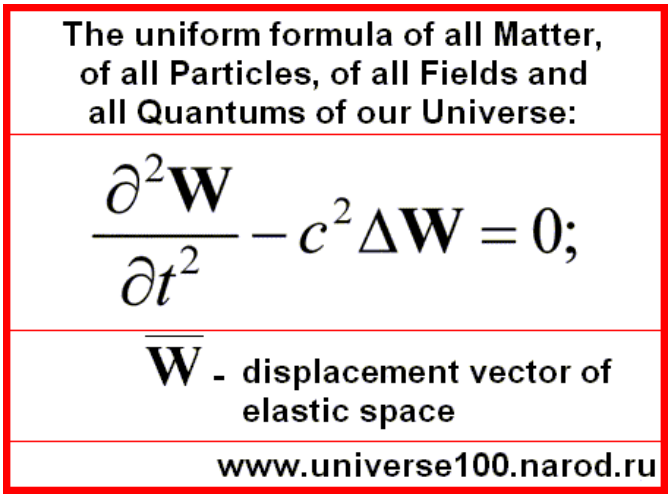
http://vixra.org/abs/1802.0239

1. The essence of the hypothesis.

Our mathematical model is that:

1. The universe is a rigid elastic continuum. This continuum does not have any numeric parameters or constraints. This continuum may not have any mass or density. But by virtue of the law of conservation, it has some resistance to deformations.
2. In this continuum ALWAYS existed, and ALWAYS will exist all kinds of waves. The movement of the waves creates the whole picture of the universe that we observe.

Including wave vortices create material particles. Mathematical descriptions are attached.
3. All visible and invisible objects of the universe, from large to small, are wave objects in this continuum. All visible and invisible objects of the universe, from large to small, are solutions of the wave equation:



(1-1)

4. All wave objects in a gukuum are described by an algebraic task
parameters of elasticity of a solid body and a three-dimensional wave equation. When This simply assumes that these are "small" and "linear" waves. All questions like "what is" does not make sense. Continuum and everything.
5. As physical = letter parameters it is convenient to use the Lame coefficients L_1, L_2, L_3 (these are elementary combinations of the coefficients of compression, shear and torsion of a solid body). There are no numerical restrictions on the Lamé coefficients. Just the coefficients of Lame L_1, L_2, L_3 and everything.
6. Thus, the universe and all the matter contained in it are described only by letters, algebra. However, objects can be compared numerically. For example, the mass of the proton wave vortex can be numerically compared with the mass of the electron wave vortex.
7. All elementary particles, fields, photons, ball lightning, even lightning, dark matter are different types of solutions of the wave equation. So far we know several types of solutions to the wave equation, three spherical and three cylindrical, but perhaps this universe is not limited to.
8. **The nonlinearity** that exists in the universe is explained by the law of "**winding a linear solution on itself**". This is a very important law that makes it possible to understand the formation of elementary particles. As a result of such winding, or layering, the linear solution becomes non-linear and creates all the variety of the material world. This law consists in adding to the integral for the energy a factor $\mathbf{1/r^2}$.

2. Calculation of angular moments (spins) of loks.

Next, everywhere we work in spherical coordinates.

So, we take in mind the wave whirlwind = lok, and position it so that the wave rotation

occurs around the Z axis. We assume that all the oscillations in the lok occur in the same direction. So it or not, we do not know yet. But this assumption is close to the truth. It is true in the first degree of approximation. This is our mathematical model. We locate the loks so that these oscillations in the lok occur along the Z axis, and the wave itself runs around the Z axis. Similarly, the lok energy moves around the Z axis. And in exactly the same way the movement of the energy of the lok creates an angular momentum = spin.

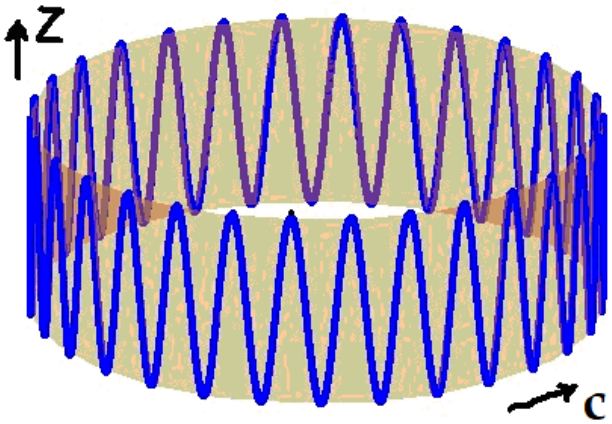


Fig.1.

Figure 1 shows a fragment of a wave traveling around the Z axis. The oscillations in it are directed along the Z axis. And the wave runs around the Z axis. As will be seen from the following, the carrier frequency (in blue) is constant on the entire wave vire. However, with the distance from the Z axis, the amplitude of the traveling wave changes. In addition, with the distance from the Z axis, the angular velocity of the wave changes. That is, the outer layers are lagging behind the inner layers.

Next, we use the materials outlined in the previous article.
We go for simplicity to the dimensionless length:

$$k \cdot r = q \tag{2-1}$$

Useful formulas:

$P = \frac{sin(q)}{q}$	$Q = \frac{cos(q) \cdot q - sin(q)}{q^2}$	$R = \frac{2 \cdot sin(q) - 2 \cdot q \cdot cos(q) - q^2 \cdot sin(q)}{q^3}$

(2-2)

Heuristic assumption.

To calculate the angular momentum, it is necessary to integrate the angular moment of all infinitely small elements of the wave vortex. A heuristic assumption was made: the sign of the functions Q and R standing in quadratic forms for the energy of the loks

precisely determines the direction of motion of this energy element. This is quite logical, and a fairly consistent assumption. Analysis of the formulas for the lok energies, analysis of the formulas for R and Q, the absence of an angular dependence on φ in them, shows that in this case the energy in the loks rotates as if by spherical layers around the Z axis. In determining the direction of motion of the layers of mass = energy of simple loks (0,0) and (1,0), only one variable q participates. When moving from layer to layer, the direction of energy movement can even be reversed. But if the sign can be fixed, then the sign itself or the direction of the movement of the element in at least one layer is not yet possible to determine. Therefore, all the formulas given below are valid "to the contrary".

Thus, a plausible general formula for the angular momentum of the simplest loks M_z has the form:

$$M_z = \iiint [\pm sign(Q) \bullet \frac{\rho^1_Q}{r^2 c^2}][r\sin\theta][c][r^2 \sin\theta d\varphi d\theta dr]$$

(2-3)

ρ^1 energy density of an element of volume.

$\rho^1{}_Q$ - part of the energy density depending on Q.

Q - previously defined auxiliary quantity.

Under the integral sign are four elements, which are highlighted in square brackets for clarity. The first square bracket contains the elements of the mass density of the lok (the difference from the energy - c^2 in the denominator), taking into account the "stratification" (r^2 in the denominator) and also taking into account the sign with which this mass will enter into the angular momentum formula (function $sign$). That is, depending on the direction of rotation of this element. The second square bracket is the distance from the axis of rotation to the Z axis. The third square bracket is the velocity of the mass element, the speed of light. The fourth is an element of volume. That is, it is the moment of the impulse in the classical sense of it.

The integrand can contain several functional dependencies, depending on the complexity of the lok (m,n).

Lok (0,0).

The energy of the lok (0,0). The general formula of energy:

$$E_{0,0}(q) = \frac{2}{3}\cdot\pi\cdot(L_1 + L_2)\cdot\int_0^q \left[\frac{(\cos(q)\cdot q - \sin(q))}{q^2}\right]^2 dq \qquad E_{0,0} = \frac{L_1\cdot\pi^2}{9} + \frac{L_2\cdot\pi^2}{9}$$

(2-4)

The general equation for the angular momentum, according to formula (2-3):

$$M_{0,0}(q) = \frac{2}{3c}\cdot\pi\cdot\left(L_1 + L_2\right)\cdot\int_0^q sign(cos(q)\cdot q - sin(q))\cdot\left[\frac{(cos(q)\cdot q - sin(q))}{q^2}\right]^2\cdot q\,dq$$

(2-5)

The distribution of the angular momentum and the distribution of the angular momentum density inside the particle as a function of the radius are illustrated by the behavior of the integral and the integrand in (2-5):

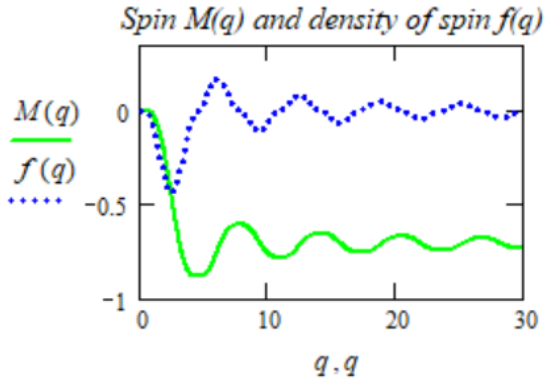


Fig. 2.

As seen from the graph, the spin density at infinity tends to zero, and the moment itself asymptotically approaches a certain value, approximately equal to:

$$M_{0,0} = -0.7\cdot\frac{2}{3\cdot c}\cdot\pi\cdot\left(L_1 + L_2\right)$$

(2-6)

Lok (1,0).

The lok energy (1,0). The general formula of energy:

$$E_{1,0}(q) = \int_0^q \frac{2}{5}\cdot\pi\cdot L_1\cdot R^2\,dq + \int_0^q \frac{16}{15}\cdot\pi\cdot L_1\cdot\frac{Q^2}{q^2}\,dq + \int_0^q \frac{2}{15}\cdot\pi\cdot L_2\cdot\left(\frac{Q}{q}-R\right)^2 dq$$

(2-7)

As can be seen from formula (2-7), in the lok (1,0) there are, as it were, three functional "nuclei" of spin formation. it Q , R. In addition, the sign function contains the angular coordinate θ. The general equation for the angular momentum, according to formula (2-3):

$$M_{1,0}(q) = \frac{2L_1\cdot\pi}{5c}\cdot\int_0^q sign(R)\cdot R^2\cdot q\,dq + \frac{16L_1\cdot\pi}{15c}\cdot\int_0^q sign(Q)\cdot\frac{Q^2}{q^2}\cdot q\,dq - \frac{2L_2\cdot\pi}{15c}\cdot\int_0^q sign\left(\frac{Q}{q}+R\right)\cdot\left(\frac{Q}{q}+R\right)^2\cdot q\,dq$$

(2-8)

Assuming that $L_1=L_2=L$, which in most cases is valid for all terrestrial materials, we obtain the following graphical dependences of the radial distribution of the angular momentum and the density of distribution of the angular momentum inside the particle as a function of the radius. Without correction factors:

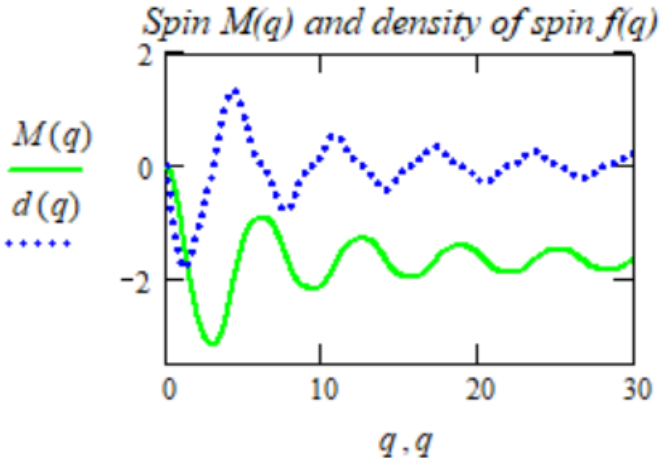


Fig. 3.

As seen from the graph, the spin density at infinity tends to zero, and the moment itself asymptotically approaches a certain value equal to approximately:

$$M_{1,0} = \frac{-3}{50\cdot c}\cdot\pi\cdot L$$

(2-9)

Lok (1,1).

The lok energy is (1.1). The general formula of energy:

$$E(q) = \frac{L_1 \cdot \pi}{15} \cdot \left(6 \cdot \int_0^{\infty} R^2 \, dq + 2 \cdot \int_0^{\infty} \frac{Q^2}{q^2} \, dq \right) + \frac{L_2 \cdot \pi}{30} \cdot \left(8 \cdot \int_0^{\infty} R^2 \, dq - 4 \cdot \int_0^{\infty} \frac{Q}{q} \cdot R \, dq + 18 \cdot \int_0^{\infty} \frac{Q^2}{q^2} \, dq \right)$$

(2-10)

As can be seen from formula (2-10), there are also three "nuclei" of spin formation in the lok (1,1). But they are reduced to the same three: this Q, R and $Q \bullet R$. In addition, the function sign contains angular coordinates θ and φ. The triple integral with sign functions inside is very complicated, so there is no complete certainty that we did everything right. The general equation for the angular momentum, after integration with respect to the angular coordinates, according to formula (2-3):

$$M_{1,1}(q) = \frac{2 \cdot \pi \cdot L_1}{15 \cdot c} \cdot \int_0^{q} sign(R) \cdot R^2 \, dq - \frac{2 \cdot \pi \cdot L_1}{15 \cdot c} \cdot \int_0^{q} sign(Q) \cdot \frac{Q^2}{q^2} \, dq + \frac{\pi \cdot L_2}{6} \cdot \int_0^{q} sign(Q) \cdot \frac{Q^2}{q^2} \, dq + \blacksquare$$

$$\blacksquare + \frac{\pi \cdot L_2}{30} \cdot \int_0^{q} sign\left(3 \cdot Q^2 - 4 \cdot Q \cdot R \cdot q + 8 \cdot R^2 \cdot q^2\right) \cdot \frac{\left(3 \cdot Q^2 - 4 \cdot Q \cdot R \cdot q + 8 \cdot R^2 \cdot q^2\right)}{q^2} \, dq - \frac{\pi \cdot L_2}{3} \cdot \int_0^{q} sign(Q) \cdot \frac{Q^2}{q^2} \, dq$$

(2-11)

It should be noted that the coefficients in the formula for the energy and in the formula for the moment are significantly different. This is due to the fact that dependencies on angular coordinates appear in the lok (1,1). Which, after a rather complex integration (because of the presence of the sign function) lead to such coefficients.

Assuming that $L_1 = L_2 = L$, which in most cases is valid for all terrestrial materials, we obtain the following graphical dependences of the radial distribution of the angular momentum and the density of distribution of the angular momentum inside the particle as a function of the radius. The correction factor, so that both graphs are visible, for M is equal to 0,2.

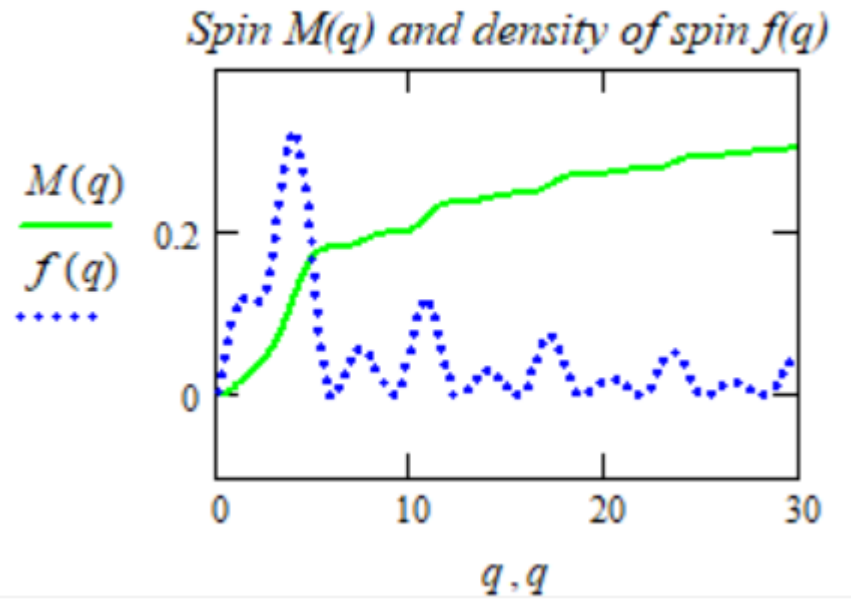


Fig. 4.

As can be seen from the graph, the spin density at infinity tends to zero, and the moment itself asymptotically approaches 0.3. Taking into account all the coefficients adopted on the scale graphs, the moment of the lok (1,1) is approximately:

$$M_{1,1} = L \cdot \frac{2 \cdot \pi}{5c}$$

(2-13)

Comparing the angular moments (spins) of loks does not make much sense. Because solutions have constant coefficients, different for all solutions. But the participation of young and strong mathematicians and physicists will make it possible to clarify the problem of identification between real particles and loks.

Other loks.

As our check shows, loks (3,1), (3,2) and (3,3) also have finite, computed angular moments. Therefore, the identification of elementary particles is still difficult. Also, we can not say that having the spins of loks by formulas (2-6), (2-9), (2-13), we can compare them with each other. These formulas are obtained on the assumption that $q=k \bullet r$, and the coefficients k are related to the real masses of the particles. These masses are different. In addition, in each solution a constant at the beginning is possible, which is traditionally determined only on the basis of real masses and spins. Other considerations we have not yet. Therefore, we are still postponing the identification of elementary particles. We assumed that lok (1,0) is a neutron, and Lok (1,1) is a proton. Based on the similarity of the charge distribution graphs inside the neutron and the spin inside the lok (1,0). However, our friend **Warren R Giordano** said that the neutron is more complex, so it is not stable. That is, most likely the neutron is a lok (1,1). Now, Loks (3,1), (3,2) and (3,3) are connected to the review. We'll keep thinking.

13. Electric charge and spin of elementary particles.

Abstract. The graphs of the distribution of the electric charge and spin inside the elementary particles are compared. The proximity of the physical essence of the values of the electric charge and the spin of elementary particles is established.

Below we use information and graphs about the "structure of nucleons" from the same reference book Javorsky - Detlaf [10].

There is a theoretical distribution of spin in the corresponding loks, but there is nothing to compare. There are no experimental data on the spin distribution in elementary particles. In this case, there are experimental data on the charge distribution in the proton and neutron. But we do not yet have a clear definition of the electric charge. It remains to be assumed that the charge distributions in the proton and neutron correlate to some extent with the distributions of the spin in them. There are good arguments for this. Therefore, here we compare the experimental graphs on the electric charge distribution in the particles (on the left) with the theoretical graphs of the momentum moments of the corresponding loks (on the right). This is a very tense comparison, but as it will be seen from the following, it carries certain information.

Regarding the charge and other quantities. Electron and other particles are localized wave objects. These objects are characterized by a volumetric distribution of the amplitude of oscillations of the carrier-gukuum and their shape. On the basis of the volume distribution of the wave amplitude, several derived quantities can be made up from it.

1) The integral over the space of the square of the wave amplitude - this gives the mass (= energy) of the electron. And the distribution of the square of the amplitude - gives the distribution of the mass density (= energy) inside the electron.
2) The integral over the space of the product of the wave amplitude at a distance from the axis of symmetry gives the spin, and the integrand itself is the distribution of the spin in space.
3) Another combination, in order to obtain an electric charge in the integral, can be made as follows: the combination for energy must be multiplied by the distance from the center of the particle. In this case, the square of the charge is obtained as a result of integration (from dimensional considerations). While this direction was not checked for lack of time and finances.

Interaction of charges. Physics of interaction.

1) The wave equation gives localized solutions. This is verified and proven. The items will be updated.
2) The fact that these solutions revolve around the axis indicates that there is a component (or two) in the stress tensor in the gukuum, which (as a result of the law of stratification) "turns" the motion of the wave, forcing it to move in a circle. This component is. Otherwise, the wave would fly in a straight line.
3) Consider the interaction, for example, of two electrons. Here we bring the electrons together. What's happening? And what happens is that the component of the stress tensor that wraps the wave in the electron itself, it also acts on the second electron! That is the essence of the interaction. These components have two electrons, they are absolutely identical.
4) We have established that the mass of all particles (= internal energy) decreases

according to the law *1/r*. This means that the components of the stress tensor also decrease according to the same law. Hence, the interaction between electrons also decreases according to the same law. But this is the Coulomb Law.
5) It is necessary to strain strongly to estimate the force of cohesion of rings in an electron. But it is possible, there are glimpses. A method of small perturbations, a method for estimating energy, and so on are possible. But if we value this force, then we can apply it to evaluate the strength of the interaction between electrons. It is a complex mathematics, from a bay - nothing can be solved.

It is also noted that the signs of the coefficients in formulas (1-42), (1-44), (1-46) have not yet been specified. It is also quite obvious that the signs of charges for an electron and a proton and their mutual attraction do not say anything about the signs of their spins.

Looking ahead, it can be noted that with the experimental results on the charge density the integral of the spin density (the spin growth curve) and the spin density proper also correlate well enough. No global conclusions are further made, except for some visual similarity, the correlation of graphs.

In traditional physics, the concept of electric charge is introduced to illustrate the interaction between particles. Readers are so used to this concept, to the convenience of working with this concept, that they perceive it as an objective reality. That is, everyone believes that the electric field, like the magnetic field, as well as the gravitational, as well as matter itself, elementary particles - all this really exists. How else? All this is perceived either by our senses or by instruments designed for our senses. Even a boson is invented, similar to the Higgs boson, which is the charge carrier.

In the theory of the Elastic Universe, there is only an infinite elastic space - the gukuum and there are all kinds of its stress fields in this gukuum. That is, there is a stress field tensor of 3x3. The squares of the values of the components of this stress tensor determine the 9 components of the energy density of the stress field at a given point. The sum of the squares of these 9 components of the stress tensor determines the total energy density at a given point. These are the foundations of the theory of elasticity, they are set forth in any textbook.

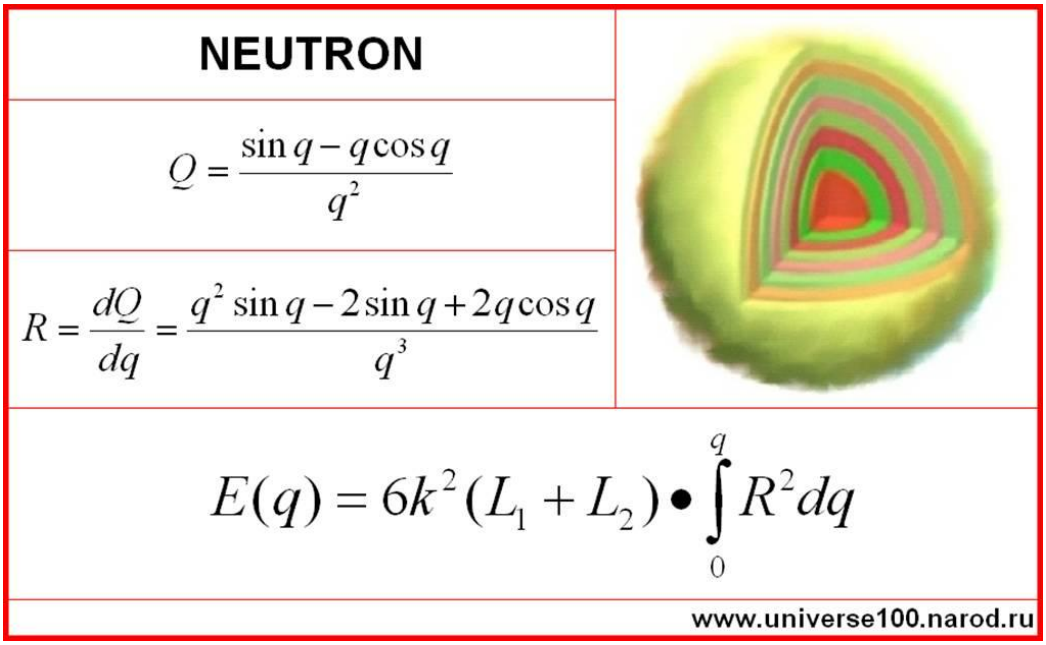
It is known that the tensor 3x3 is reduced to diagonal form. There are only three diagonal terms. This is the reason that there are only three "fields": electric, magnetic and gravitational. Although these fields are not described only by the diagonal terms of the stress tensor. Thus, if this stress tensor in gukuum is brought to diagonal form, then the remaining 3 diagonal components of the stress tensor determine three types of "fields" in our physical sense. Of course, this applies only to a fixed point in the space of the gukuum. Invented by physicists of the so-called. strong or "weak" interaction in reality have another explanation, which does not go beyond the stress tensor in gukuum.

The fields considered in physics, electric and magnetic (and gravitational) are determined by their strengths. These values are taken very subjectively. Thus, the electric field is introduced in the experiment on the interaction of charged bodies, and the magnetic field in the interaction of electric currents. Therefore, their relationship to the components of the stress tensor in gukuum is determined through some combinations of the proper component of the stress tensor and their derivatives. And these combinations are very different. For the same reason, the search for a "magnetic monopoly" is unsuccessful and meaningless.

In the same way as an electric field, the concept of an electric charge of a particle

(electron, proton) is subjectively introduced. That is, a charge is in some way a definable quantity that estimates the property of particles to be attracted to each other or repelled from each other. Since physicists have not known the mechanism of interaction of "charged" bodies up to now, the charge model suited everybody. Type of what can be a property of "charge" to endow blondes and thereby explain their attractive ability.

In the theory of the Elastic Universe, the ability of particles to attract - the repulsion arises and comes from the ability of their localized waves (from which all particles and all matter consist) to slightly influence each other at their spatial intersection. Depending on the direction in the intersecting waves, there is either attraction or repulsion. Since each particle in the theory of the Elastic Universe consists of the wave spheres rotating around the axis (an infinite number, but their amplitude rapidly falls already on 4 spheres), which alternately rotate either in one direction or in the opposite direction (this is not a fantasy, it is a strict mathematics), then the total interaction between the particles is determined by the total interaction of all the wave rings of a given particle.

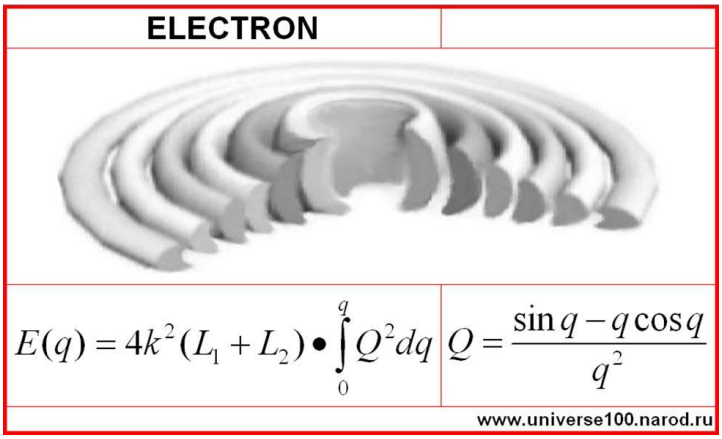


This is a drawing of a neutron. With the exact formula. The neutron consists of concentric wave spheres rotating around the vertical (in this figure) Z axis.

When calculating the interaction of particles, the sign of rotation of each spherical wave layer of each lok (elementary particle) is taken into account. Of course, in computing the space-integrated interaction of two loks, the angles of intersection of each spherical wave layer of one lok with each spherical wave layer of the other loks must be taken into account. That is, this task is very difficult and cumbersome, but it is not necessary to solve it to the end, the main thing for us is to understand the physics of the process. It is very important to understand the physics of the process. Because then there will be no desire to build colliders and bury billions of dollars in the land for the sake of meaningless collisions of particles, because all this is theoretically understandable. Never at any collider will anything new be obtained except what gives us an understanding of the theory of the elastic universe. Although, if you understand and know the theory of the elastic universe, then there may be a reasonable application to the colliders. To solve problems that no one knows yet.

If someone doubts the strength of such a system of spheres in one elementary particle - then look at the electric motor. It is the strength of electrons that are huge in size (a free electron is larger than many atoms) and their mutual engagement between

the windings of the electric motor or between the winding and the rotor) causes the rotors to spin. And develop colossal power. But about this in the following chapters.



In the figure: the portrait of an electron (approximate) and the formula for it (absolutely accurate). Moreover, none of the wave rings that make up the body of an electron can be removed or separated. There is no such power in nature! And the funniest thing: all these rings rotate around the ring at the speed of light, but the neighboring rings rotate in opposite directions. The amplitude of these circular waves at the point of contact of the rings drops to zero. And this, too, is not a fantasy, it is a strict mathematics. Plus confirmed by the comparisons given below with the experiment.

And now guess. Where else are the signs of the direction of rotation of the spherical shells of loks taken into account? - And they are taken into account in calculating the momentum of the loks, that is, in calculating their spins! The spins of the loks are calculated as the sums of the mini- spins of all spheres of the lok, taking into account the sign of their rotation. Consequently, there must be some correlation between the spins of the loks and their electric charges. Moreover, such a correlation is also observed in nature. The spins of a proton and an electron are the same in absolute magnitude and opposite in sign exactly as their charges. This also does not happen by accident.

In experiments carried out by Coulomb, a law was established on the strength of the interaction, inversely proportional to the square of the distance between charged objects. In this case, in our opinion, the directionality of the spin of the particles constituting the charge of the object under study has been experimentally averaged. Because, according to our theory, the intensity of the "electric field" is not spherically symmetric and depends on the spherical coordinates. This intensity is perhaps axisymmetric for an electron. And the neutron.

But anyway, we confidently conclude: the magnitude of the spin of the particles must correlate with their charges! Consequently, the distribution of the spin inside the particles must correlate with the charge distribution inside the particles, if this can certainly be measured. An can! Let's see what we have in practice.

PROTON

$$Q = \frac{\sin q - q\cos q}{q^2}$$

$$R = \frac{dQ}{dq} = \frac{q^2 \sin q - 2\sin q + 2q\cos q}{q^3}$$

$$E(q,\theta) = \frac{3k^2(L_1 + L_2)}{4} \bullet$$

$$\bullet \int_0^q \int_0^\theta \sin\theta \frac{R^2 q^2 \sin^2\theta + Q^2(1+\cos^2\theta)}{q^2} d\theta dq$$

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It turns out that scientists have been interested in these issues for a long time. Experiments were conducted in the 1960s and 1970s, when nobody knew about the model of the Elastic Universe and did not suspect anything. The internal arrangement of elementary particles was an absolute mystery to all. I remember, and in my student years (1971-1977, MIPT) I often thought: how are they arranged inside? What is this solid electronic that rotates around a solid proton? Why does it rotate so steadily, despite all collisions with surrounding electrons ?! Why does not it fall on the nucleus of an atom? Where do quantum laws come from?

Therefore, the experimenters of the 1960s and 1970s honestly carried out a gigantic job, colliding particles and determining trajectories after a collision in a bubble chamber. And cunning (mathematicians like this) tricks and receivers treating these results. In this case, the electron was considered to be a small solid particle and it was from these positions that the results of the experiments were interpreted! Then they did not know and did not suspect that the electron is huge compared to a proton or a neutron and more like a ball, empty inside. However, as we know from everyday experience, the collisions of heavy steel balls from bearings and the collision of empty balls are close in physical animation. Just as a collision, for example, a steel ball with a ball is also quite close to a collision of two balls or two steel balls. Thus, the nuclear physicists of the 1960s and 1970s, using the generally unreliable model of a solid small electronics, bombarding these electrons with neutrons and protons and interpreting the results from this incorrect model, obtained very physically meaningful results. The explanation that no one in those days could not give. This explanation of their results are only now, 40-50 years later. More precisely in 2003. But for 7 years now nobody recognizes these explanations.

Comparison of the available experimental data with the available theoretical results.

So, for starters, the first drawing is taken from the Yavorsky reference book of 1980. He created Yavorsky on the basis of the very results of the experiments of the 60-70's. These are old (but invaluable!) Studies of the charge distribution inside the proton and neutron.

The experimental distribution of electric charge inside a neutron according to the data of the Javorsky-Detlaf directory.

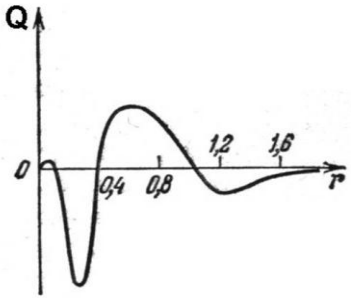

Fig. VIII.2.5.

б)

Accompanying text: The results of similar experiments on the scattering of fast electrons by neutrons are shown in Fig. VIII.2.5, b.

Scattering occurs as if the "electric radius" of the neutron were zero. When interacting with fast electrons, the neutron behaves as if its pion cloud coincides in size with the "core". In the inner and outer regions of the neutron, the electric charge is negative, in the middle region it is positive. The total neutron charge, equal to the area under the curve, is zero.

The structure of elementary particles is being intensively studied at the present time.

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The comparison is shown in the table below. We slightly changed the first picture in comparison with the book, because there was an overlay: on it the letter q denotes the density of electric charge. And we, unknowingly, in our theory designated q as a dimensionless radial coordinate. Well, it's clear, someone will get confused, make a noise, and blame us all. Therefore, we designated the charge density as Q.

The second figure is the spin distribution inside the neutron according to our theory of the Elastic Universe. Having eyes yes see ...

Comparison of the experimental charge distribution inside the neutron with the theoretical spin distribution, found from the model of the Elastic Universe.

Experimental distribution of charge.	Spin distribution inside the neutron according to the theory of Gukuum.

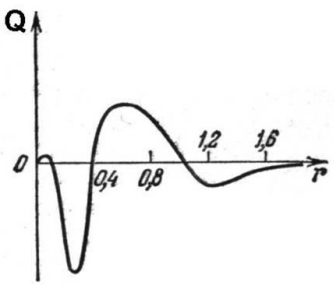
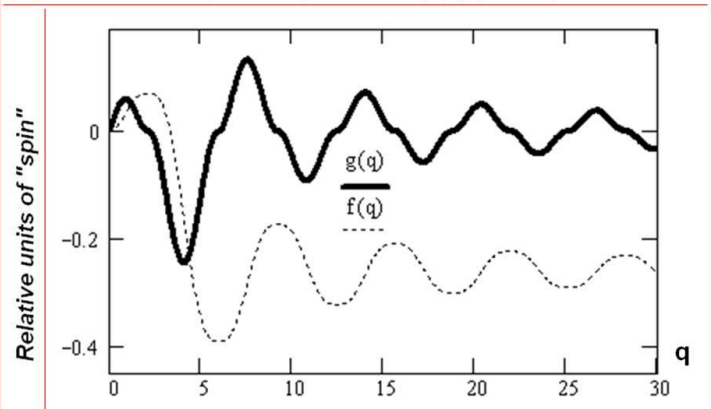


Fig. VIII.2.5.

б)

The "spin density" of the lok $(1,0)$ (neutron)



The dimensionless radial coordinate q.
The dotted line denotes the integral spin graph.
Here $g(q)$ is the radial density of the spin, and $f(q)$ is the dependence of the spin increment on the dimensionless radius q.

Figure 10.

It is reported that the neutron charge density is described by graph VIII.2.5-b. The scattering of fast electrons by a neutron occurs as if the electric radius of the neutron is zero. And pion cloud coincides in size with the core. In the inner and outer regions of the neutron, the electric charge is negative, and in the middle region it is positive.

Figure 11.

Graphs 1) Accumulation of the angular moment of the lok $(1,0)$ from the distance q. (Solid line, formula (1-43)).
2) Dependence of the radial spin density of the lok $(1,0)$ on the distance q. (The dashed line, the integrand in formula (1-43)). The effect of the first minimum of a solid graph on the spin is stronger than on the charge. As a result, the charge is zero, and the spin is not.

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Comments. Here, in the figure to the right, a solid solid line designates the radial distribution density of the spin inside the assumed neutron. A dotted line is the integral density of the spin as a function of distance.

Attention is drawn to this small "little knob up" on both charts and all subsequent curve bends. The distances at which these bends occur are practically the same. If someone says that this " tubercle" is an ordinary matter, let him look further at the corresponding graphs for the proton.

It should be noted only, we honestly admit that the spin of the alleged neutron is not zero according to our theory. But also not comparable in size with the spins of an electron and a proton. While the spins of the electron and proton in our theory coincide in absolute value (colossal confirmation of the theory of the elastic universe!), The neutron spin is small, only 10-15 percent of the spin of the electron and proton, but not zero. Explanations to this are possible, but this is a matter for serious checks and reflections. This is a matter of the future, as is the revision of all physics. While our working version is this: current and yesterday's scientists, knowing that the neutron spin is not zero, dragged it to the ears to zero. Once the charge is zero ... For clarity of "divine" origin, spin, for uniformity in physics, and elementary to simplify understanding. So there you get lost in these quantum matrices, and if you still introduce different spins for all particles ...

There is as yet an unexplored shift of the spin graph of the neutron, as a result of which a spin appears at zero charge. In [10] on p.518 it is noted that the "pion cloud" of the neutron is about the same as that of the proton, but has the opposite sign, as is evident from the graphs given. It is seen that the spin of the neutron is directed to the

other side than the spin of the proton. Negative wave pulls. Taking into account (Fig.1) that in the place where the negative wave is just located and the negative charge, we get a positive magnetic moment. That is precisely the opposite directions of the spin and magnetic moment of the neutron.

The question is: is it possible that such a coincidence of the configurations of graphs in Figures 10 and 11 is possible? This bulge is up near zero on both graphs, is it random? This subsequent deep minimum, is it also random?

The second maximum in the figure on the left is achieved at $r=0.6\bullet10^{-13}$ cm. And in the figure on the right it is reached at $q=9$ or in centimeters (1-53) approximately $1,47\bullet10^{-13}$ cm.

$$r = 9 \bullet \lambda_{1,0} \cong 1,47 \bullet 10^{-13} см$$

(1-58)

Exceed the theory over the experiment, 2 times. But the experimental data were treated as bombardment of a neutron by a point electron. But in reality the electron is huge ... Maybe the dimensions of the electron are superimposed on the results of all the experiments. Or what other reason. The order of magnitudes is important.

And what do we have with the proton? What are the distributions of charges and spins in the proton and its theoretical analog? - The situation here is very similar.

The following graph shows the distribution of the charge inside the proton, according to the same studies of the 1960s and 1970s. The peak of the charge density inside the proton is visible. The rest of the charge distribution curve, both inside the proton and inside the neutron, scientists could not display the 60-70s. Why? - Because the accuracy of measurements, trajectories decreases with increasing distance. The error grows, readings are smeared. Yes, and the model that explains all this was not.

The experimental distribution of electric charge inside a proton according to the data of the Javorsky-Detlaf directory.

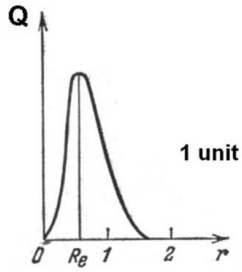

Fig. VIII.2.5.

a)

1 unit = 1 fermi = 10^{-13} cm

Accompanying text: Scattering of fast electrons with an energy of 550 MeV on protons allowed to study the distribution of the electric charge density of a proton as a function of the distance r from the center of the "core". In this case it is necessary to take into account that the proton charge is indivisible and always manifests itself as a single whole. Therefore, the distribution of the electric charge in the proton does not imply the possibility of experimentally isolating a certain part of this charge. In Fig. VIII.2.5, a shows the dependence on r (measured in Fermi units) of the charge q contained in the spherical layer enclosed between the radii r and $r + dr$. The curve in the figure has a pronounced maximum, occurring at a distance $R_e = 0.77 \cdot 10^{-15}\ m$, which is called the "electric radius" of the proton. The area under the curve is equal to the proton charge e.

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Below on the right graph is our theoretical spin distribution within the assumed proton according to the theory of the Elastic Universe. Recall that according to our explanation given at the beginning of this report, the distributions of the spin and charge inside the particles must correlate, because to calculate these quantities, it is necessary to sum the alternating series, they must take into account the multidirectional motion of the spherical energy layers inside the particles.

Comparison of the experimental charge distribution inside the proton with the theoretical spin distribution, found from the model of the Elastic Universe.

Experimental distribution of charge.

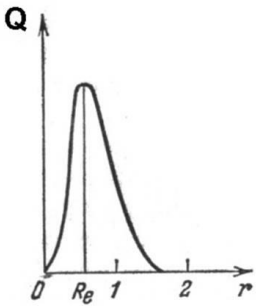


Fig. VIII.2.5.

a)

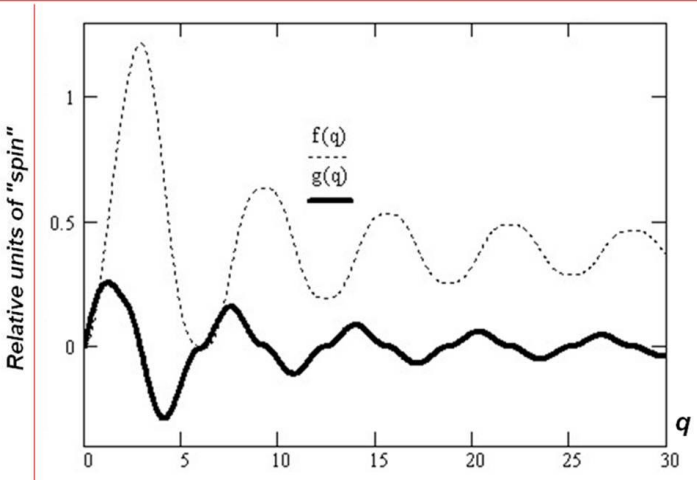
1 unit = 1 fermi = 10^{-13}cm

Figure 8.

It is reported that the radial charge density of a proton is described schedule VIII.2.5-a.
There is a sharp maximum of the graph at a distance from the center proton equal to 0.77×10^{-13} cm.

Spin distribution inside the proton according to the theory of Gukuum.

The "spin density" of the lok (1,1) (proton)



The dimensionless radial coordinate q.
The dotted line denotes the integral spin graph.
Here g(q) is the radial density of the spin, and f(q) is the dependence of the spin increment on the dimensionless radius q.

Figure 9.

Graphs 1) Accumulation of the angular moment of the lok (1,1) from the distance q. (Solid line, formula (1-45)).
2) Dependence of the radial density of the spin of the lok (1,1) on the distance q. (The dotted line, the integrand in formula (1-45)).

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Comments. Here, a solid solid line designates the radial distribution density of the spin within the assumed proton. A dotted line is the integral density of the spin as a function of distance.

As can be seen from the last graph, if the "knob" at the beginning of the graph of the neutron gave an insignificant total contribution, which is then disavowed by the subsequent deep negative "knob", then the proton has the first "knob" very large and gives such a powerful contribution to the particle spin (and hence and in its charge) that the spin and charge no longer change their sign on the rest of the interior of the proton.

As can be seen from both comparisons, both density graphs and integral curves correlate with experiment. Which, in all probability, played a role in interpreting the experimental results. That is, the experimenters felt for all the results, where there is a "zone of compaction" of the charge, and where the "zone of discharge".

Here and below, the "momentum density" figure appears on the graphs on the right. The graph on the right corresponds to formula (1-45). The proximity of both plots on the right figure with the charge distribution on the left is obvious. At the same time, there is no certainty that the term "radial density" in the figure on the left meant the same as in the graph on the right.

It is very likely that the researchers were interested in what happens near the core of the proton. And they simply did not pay attention to fluctuations in the distribution far from the core. Perhaps they took this for random errors. Perhaps they did not contribute to the results and the publication because they did not know how to interpret these

results at all.

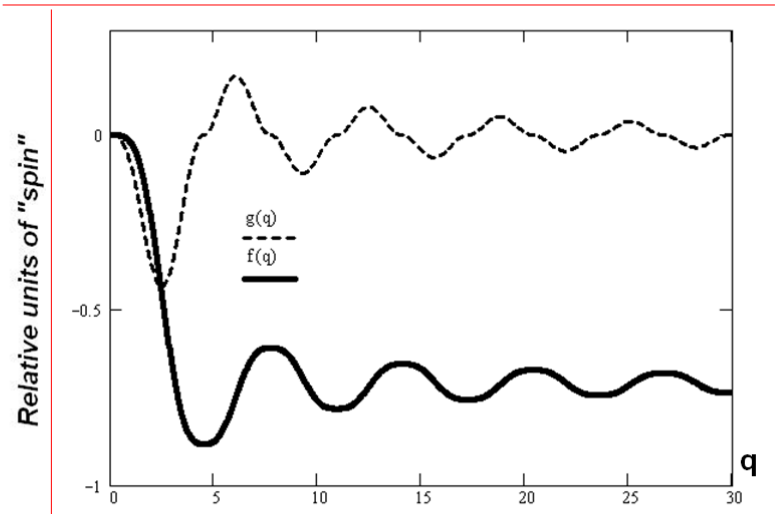
The maximum in the graph on the right is reached at $q \approx 6$. How much will it be in centimeters? In accordance with the (approximate) formula (1-55) we have:

$$r = 6 \bullet \lambda_{1,1} \approx 0{,}6 \bullet 10^{-13} \, см$$

(1-57)

It is sufficiently close to the experiment ($0.77 \bullet 10^{-13}$ cm). However, all the near-proximity experiments and theories are not surprising after their energy density configurations coincided.

Conclusions. In order to give exact theoretical formulas for the charges of elementary particles in the future it will be necessary to conduct painstaking and complex mathematical studies of the spatial distribution function of the vector stress fields in loks. However, there is evidence, with numerous other, not mentioned here, experimental confirmations of the theory of the Elastic Universe.
And what do we have with the electron?

Comparison of the experimental charge distribution inside the electron with the theoretical spin distribution, found from the model of the Elastic Universe.	
Experimental distribution of charge.	**Spin distribution inside the electron according to the theory of Gukuum.**
It is reported that direct experiments to study the structure are carried out only for nucleons. There is no direct data. ***An indirect experiment on the structure of an electron can serve as a magnetic field phenomenon around conductors with a current.*** ***The magnetic field of a conductor with a current goes far beyond the limits of the conductor.***	*The "spin density" of the lok $(0,0)$ (electron)*  *The dimensionless radial coordinate q.* *The dotted line denotes the integral spin graph.* *Here $g(q)$ is the radial density of the spin, and $f(q)$ is the dependence of the spin increment on the dimensionless radius q.*
	Figure 12.
	Graphs: 1) Accumulation of the angular moment of the lok $(0,0)$ from the distance q. (Solid line, formula (1-41)). **2) Dependence of the radial spin density of the lok $(0,0)$ on the distance q. (The dashed line, the integrand in formula (1-41))**
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Comments. Once again, we note that the signs of the spins of the alleged elementary particles have not yet been specified. Also, the ratio of signs in spins and charges is still unknown. We also note the absence at the beginning of the graph of the "bumpock" as in a neutron. This is more evidence of the reality of the graph for a neutron.

Attention is drawn to the similarity of the graphs of the electron (Fig. 12) and the proton (Fig. 9). Somewhere here is the generally accepted absolute equality (for different signs) of the charges of an electron and a proton. However, for all similarity, these graphs are different. Will not this lead to a small difference in the charges? Maybe just on the size of the neutron's charge ?!

For future approximate estimates and experiments in which the spin and charge of an elementary particle appear, it can be assumed that

$$Q = k \bullet S\,, \qquad \text{(A)}$$

where Q is the charge, k is some coefficient (which is very likely to be the same for all particles), and S is the spin of the particle. Thus, for the proton and the electron this assertion is carried out with obviousness. But for the neutron, according to our theoretical calculations, there remains the assumption that the neutron has a small back and a small charge.

For more accurate calculations in formula (A), it will be necessary to introduce corrections, the dependence on the interaction distances and fixation of the direction of the spins of the interacting particles. There is an extensive field for interesting theoretical problems on the refinement of Coulomb's law.

$$Q = k \bullet S + F(r,\theta,\varphi) + \ldots, \qquad \text{(B)}$$

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Опубликовано:
https://www.academia.edu/34532615/Electric_charge_and_spin_of_elementary_particles

14. Lok dimensions.

Abstract. Estimates of the sizes of loks, assumed elementary particles are made. A complete equality is established between the effective dimensions of the loci and the Compton dimensions of the elementary particles.

The basic solutions for loks contain indefinite constants, to which no special attention has been paid so far. Now it's time to clarify these vague constants, express them through world constants, and write out exact formulas for elementary particles.

Thus, the basic and general formulas for all loks ([22] - [25]). These are formulas obtained on the basis of numerical experiments on many loks.

The energy of the lok (j,m).

The energy of the lok (j,m) in the general case:

$$E_{j,m} = K^{E}_{j,m} \bullet \pi k^{2} \bullet (L_1 + L_2)$$

$K^{E}_{j,m}$ - coefficient obtained after solving the equations.

k - wave number. j=0,1,2,3,...; m=0,1,2,...,j;

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(1-49)

The angular momentum (spin) of the lok (j,m).

Spin of the lok (j,m) in the general case:

$$M_{j,m} = K^{M}_{j,m} \bullet \frac{k(L_1 + L_2)}{c}$$

$K^{M}_{j,m}$ - coefficient obtained after solving the equations.

k - wave number. j=0,1,2,3,...; m=0,1,2,...,j;

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(1-50)

Thus, for each loks (j,m) we obtain a system of two equations with two unknowns k and (L_1+L_2). In the left-hand side of equation (1-49), the known experimental values of μc^2 must be substituted for each putative particle. The known experimental spin $M_{j,m}$ of each particle must be substituted into the left-hand side of equation (1-50). By dividing one equation into another, we get:

Wave numbers k and wave lengths λ

of loks (j,m) (elementary particles of mass μ):

$$k = \frac{K^{M}_{j,m}}{\pi K^{E}_{j,m}} \bullet \frac{\mu c}{M_{j,m}}$$

$$\lambda = \frac{1}{k} = \frac{\pi K^{E}_{j,m}}{K^{M}_{j,m}} \bullet \frac{M_{j,m}}{\mu c}$$

$K^{E}_{j,m}, K^{M}_{j,m}$ - coefficients obtained after solving the equations. $M_{j,m}$ - angular momentum.

k - wave number. j=0,1,2,3,...; m=0,1,2,...,j;

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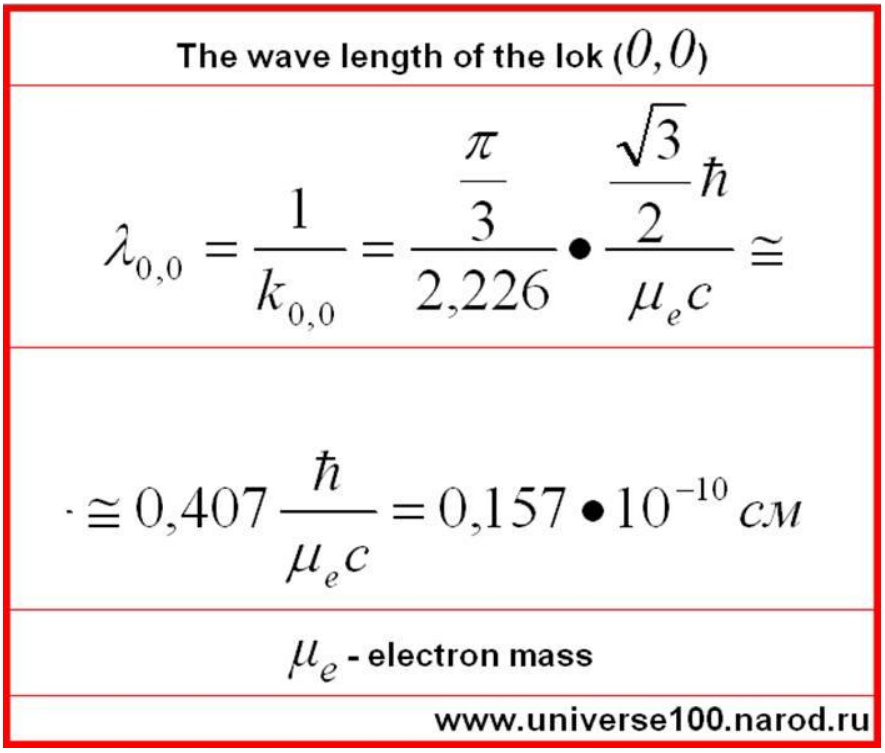
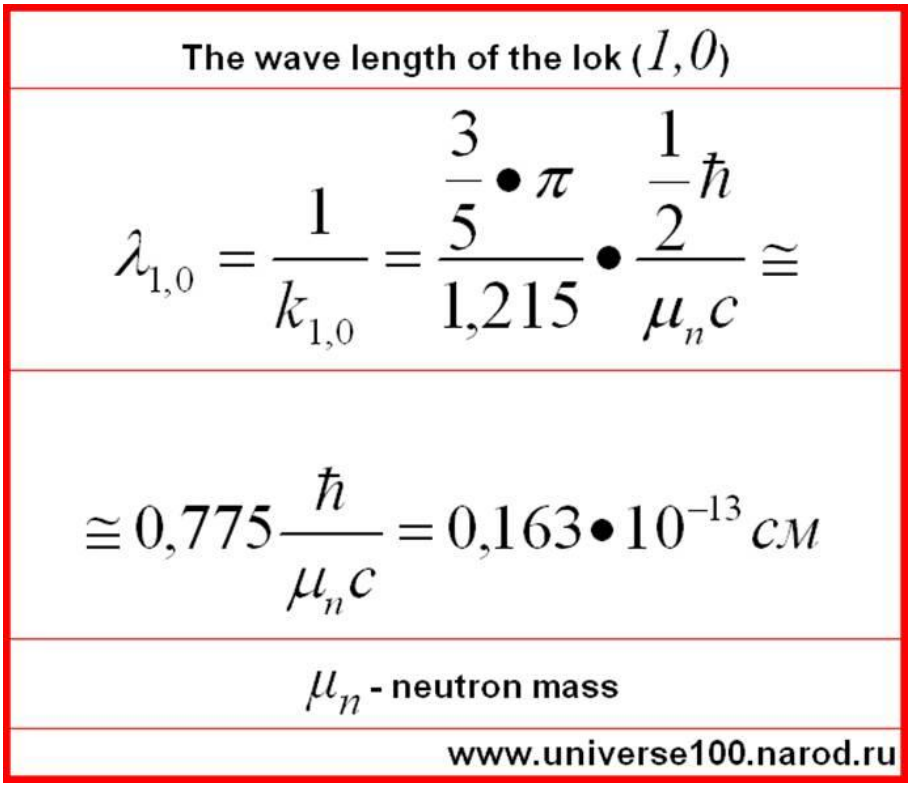
(1-51)

Whence are some wave lengths λ of the assumed elementary particles. They are equal to one division on the q axis in the graphs of Figures 4,5,7. Calculations are made immediately to the numbers, this will be needed. In accordance with formulas (1-23) and (1-42):



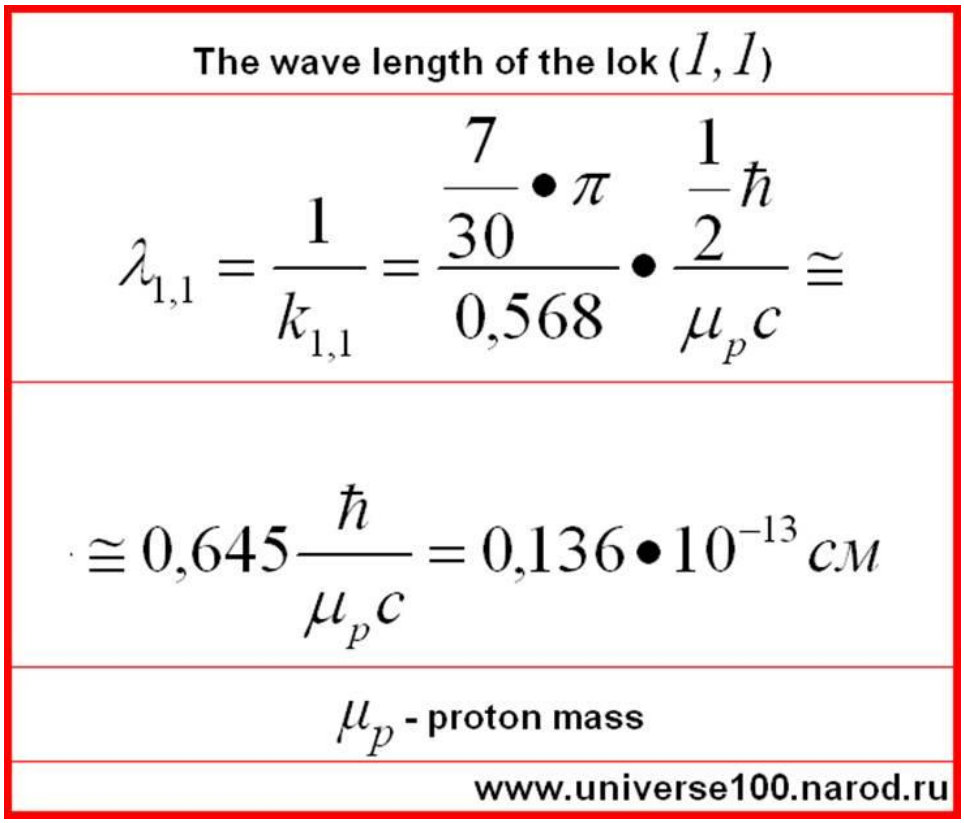
(1-52)

In accordance with formulas (1-26) and (1-44):



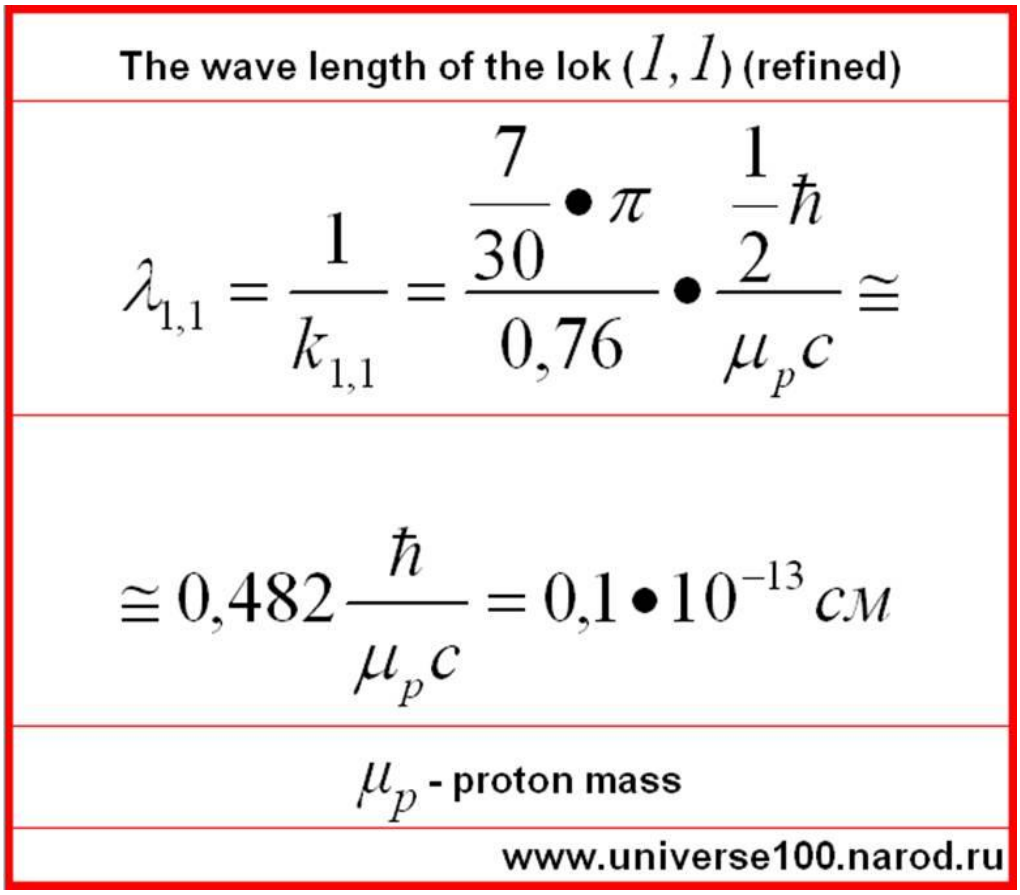
(1-53)

In accordance with formulas (1-32) and (1-46), an intermediate result is achieved:



(1-54)

The formula (1-48) is recalled and the reasoning related to it is that in the formulas (1-46) and (1-54) instead of the coefficient of 0.568, because of the non-sphericity of the lok (1,1) there must be a number of 0,76. Therefore, we can consider not sinning against the truth:



(1-55)

What relation have the values, $\lambda_{0,0}$, $\lambda_{1,0}$, $\lambda_{1,1}$ to the sizes of loks? If we look at the previous graphs of the distribution of the density of loks, we see that the masses of loks are distributed wavy, with decreasing. The effective radius of each lok, up to the radius covering the main part of the mass (Figure 4.5.7, per eye) is approximately equal to:

$R_{0,0} \approx 2.5 \bullet \pi$ units of q; $R_{1,0} \approx 2 \bullet \pi$ units of q; $R_{1,1} \approx 2 \bullet \pi$ units of q.

In accordance with the formulas (1-52), (1-53), (1-55) we obtain:

Effective radii of spheres,
covering the bulk of the lok mass.

$$R_{0,0} \cong 2{,}5 \bullet \pi \bullet 0{,}407 \frac{\hbar}{\mu_e c} \cong 0{,}509 \bullet \frac{h}{\mu_e c}$$

$$R_{1,0} \cong 2 \bullet \pi \bullet 0{,}775 \frac{\hbar}{\mu_n c} \cong 0{,}775 \bullet \frac{h}{\mu_n c}$$

$$R_{1,1} \cong 2 \bullet \pi \bullet 0{,}482 \frac{\hbar}{\mu_p c} \cong 0{,}482 \bullet \frac{h}{\mu_p c}$$

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(1-56)

Where h is the usual Planck constant not crossed out.

Having eyes, let's see: the effective radii of the loks (0,0), (1,0) and (1,1) are almost exactly the *Compton radii* of the electron, neutron and proton.

Still it is necessary to specify all results. But the moment of triumph has come.

1) The closeness of the proportionality coefficients in (1-56) for all three loks is absolutely obvious and natural. But could it be otherwise? Because the nature of all matter is one. In what theory is the size of the particles inversely proportional to (1-56) their masses ?! In what theory are the proportionality coefficients for the different loks (elementary particles) (1-52), (1-53), (1-55) and (1-56) practically the same? In which mathematical model, by substituting in the formulas the values of the particle masses, one can obtain theoretical particle sizes equal to their Compton (1-56) lengths?

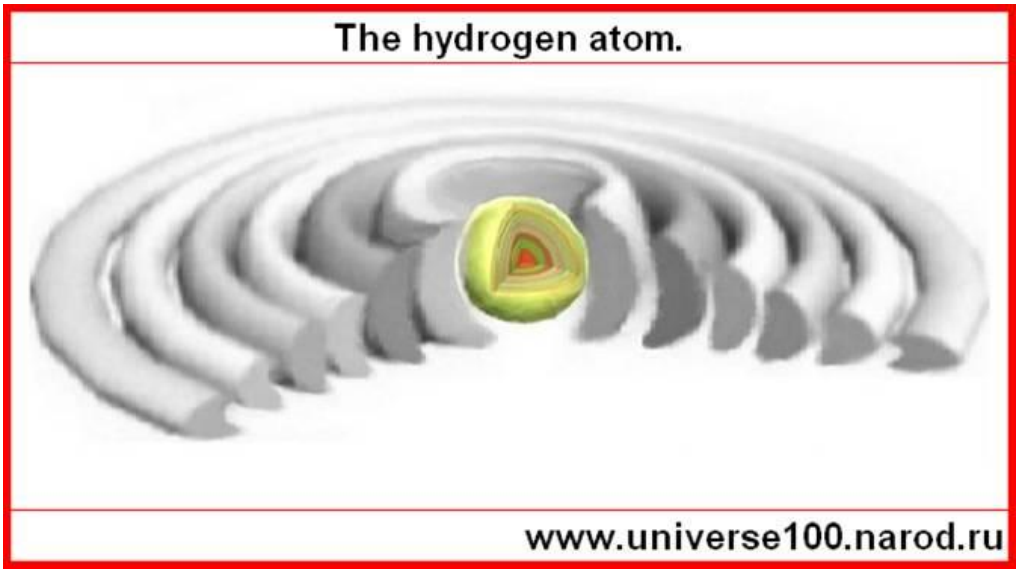
2) Electron, as expected, is slightly smaller in size than in 1900 times each. In what theory is the relationship of particle size and mass exactly the same as the ratio of sizes and masses of real particles ?! This unambiguously proves that the form of elementary particles is exactly such.

Proof number 3. *The coincidence of the sizes and masses of candidate loks for identification with the ratio of sizes and masses of real particles is the third proof of the correctness of the theory of gukuum.*

So far, the values of $C_{j,m}$ from (1-49) and (1-50) are unknown. They are expressed only through the parameters of the gukuum (L_1 and L_2). But, apparently, they were not needed. Because the solution (1-52), (1-53), (1-55) can not be considered simply "successful". This luck obviously consists in the fact that the coefficients $C_{j,m}$ must initially have been taken to be identical and included in (L_1+L_2). Let the specialists - mathematicians decide.

There is an interesting circumstance connected with the analysis of the linear dimensions of a free electron and a hydrogen atom, that is, in essence - an electron bound. It turns out that a free electron, having dimensions according to our theory, (1-

56) equal to Compton ($R_{cmpt}=1.21\bullet10^{-10}$ cm) turns out to be about 40 times smaller than the size of the hydrogen atom (the first Bohr radius is equal to: $R_{bohr}=0.53\bullet10^{-8}$ cm.). There is nothing to be surprised at. When hydrogen is formed, the electron changes its shape and expands. At the same time, it still envelops the proton. The assumption that the electron does not change its shape during proton formation and revolves around the proton is rejected by us. Initially, the proton is 1900 times smaller than the electron and easily climbs into the central hole of the electron. And then, when the electron interacts with the proton, the electron is inflated 40 times more, which is not surprising, since we do not yet know how the layers of the electron interact with the proton layers.



Опубликовано: https://www.academia.edu/34538843/Lok_dimensions

Universe is a solid elastic continuum. Part 2.

Alexander I.Dubinyansky and Pavel A. Churlyaev.

0. Table of contents.

Novels by Vladimir Dudintsev "white robes", Aleksandr Solzhenitsyn's "The First Circle" and Mikhail Bulgakov's "Heart of a Dog" will be eternally relevant in Russia.

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02. The hypothesis of Elastic Universe.
03. Law layers.
04. Terms and definitions theory gukuum.
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06 . Formula for energy locks.
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(Presumably neutron)

08. Energy specific locks j, m = 0, 1, 2
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(Portrait of elementary particles and atoms of hydrogen).
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The whole theme is available in the Internet in 2005.

Abstract. The universe is a solid elastic continuum - gukuum. This continuum does not contain any numerical parameters or constraints.

All visible and invisible objects of the universe, from large to small, are wave objects in this continuum.

All the wave objects in the gukuum are described by the letter specification of the elasticity parameters of the solid body and the three-dimensional wave equation.

The nonlinearity that exists in the universe is explained by the law of "winding the linear solution on itself." As a result of such winding, or layering, the linear solution becomes non-linear and creates the entire variety of the material world.

15. A unified theory of all fields and all kinds of matter. Easily. Handsomely. Available. Scientifically.

Abstract. A long-awaited unified theory of all fields was received, for which the giants of world physics fought so hard. In addition, it is shown that not only all fields, but all matter, are solutions of the same equation.

In the universe, there are hardly any macroscopic fields in the pure form that we

describe in Maxwell's equations or Coulomb's law or Newton's law of universal gravitation. All fields observed in nature are superposition of trillions of microscopic fields from elementary particles. In turn, elementary particles are wave vortices in elastic gukuum. And these are microscopic wave vortices in pure fields. For these waves, Maxwell's, Coulomb's and Newton's equations act with absolute accuracy, without any averaging. Therefore, the further presentation can be attributed either to microscopic fields, smaller in size than elementary particles, or in general to a purely mathematical model of all fields and types of matter.

0. Foreword.

It was February 2003. I took the article to the paid magazine, not even hoping that it would be published in the budget journal. The experience of living in Russia was available. Later I took them to the journals JETP and "Letters to JETP", it's useless. Reality is very far from what we are portrayed about domestic filmmakers or written by journalists. No reviews were given to me. And on the attempt to send a parcel (with a CD), the parcel returned with the inscription: the refusal to receive. One of the articles fell through somewhere about three years old, until I wrote to them and they returned the article without comment.

But I did publish the opening in a paid magazine. All the formulas that are lower in this article are printed in the journal in March 2003. And then let me be strangled as a scientist, let. Time is. Enemies of the country are many, both outside and inside. Even if somebody appropriates it, partially or completely. But in 100 - 200 years, still, the truth-seekers will unearth and rehabilitate. This is the ecological niche allotted in Russia for real scientists and for real science. And for rogues with their shabby dissertations, budget financing, academic degrees, high ranks, the Academy of Sciences, an additive to retirement, prestigious awards and prizes, laudatory articles and television programs are allotted.

1. What do we know about the electromagnetic and gravitational field. School level.

a) Electric field. Coulomb's law. $\boldsymbol{F}$ is the force, $\boldsymbol{E}$ is the electric field strength.

$$\vec{F} = \frac{q_1 q_2}{r^2} \qquad \vec{E} = \frac{q}{r^2} \qquad \vec{F} = q\vec{E}$$

b) Magnetic field. Ampere's law for two parallel conductors:

$$\vec{F} = \frac{2 I_1 I_2 l}{a c^2}$$

Where I_1, I_2 - currents, l - the length of the interaction of the conductors, a - the distance between the conductors, c - the speed of light, r - the distance from the charge to the observation point.

The Ampere law for a moving charge q with a velocity $\boldsymbol{V}$:

$$\vec{H} = \frac{q\vec{V}\sin(\vec{V}\wedge\vec{r})}{cr^2}$$

The force acting on the charge from the electric and magnetic fields:

$$\vec{F} = q\vec{E} + \frac{q}{c}[\vec{V}\vec{H}]$$

c) The law of universal gravitation. $\boldsymbol{g}$ is the gravitational acceleration.

$\vec{F}_{1,2} = \gamma\frac{m_1 \bullet m_2}{R^2}$	$\vec{g} = \frac{\gamma \bullet m}{R^2}$	$\vec{F}_{1,2} = m\vec{g}$

2. What do we know about the electromagnetic and gravitational field. University level.
a) Maxwell's equations in vacuum.

$rot\vec{E} = -\frac{1}{c}\frac{\partial\vec{H}}{\partial t}$	$rot\vec{H} = \frac{1}{c}\frac{\partial\vec{E}}{\partial t}$
$div\vec{E} = 4\pi\rho$	$div\vec{H} = 0$

Here and below $grad$, rot and div are some differential operators widely known in narrow circles. In everyday life the gradient, rotor and divergence are called.
b) Equation for the gravitational field:

It is known that the gravitational field is a gradient of some gravitational potential ψ:

$$\vec{g} = grad\Psi$$

3. What do we know about the electromagnetic and gravitational field. The highest level.

According to the generalization of Maxwell's equations, there is some mysterious Vector Potential $\boldsymbol{A}$, which binds the electric and magnetic quantities $\boldsymbol{E}$ and $\boldsymbol{H}$ as follows.

$$\vec{H} = rot\vec{A} \qquad \vec{E} = -grad\varphi - \frac{1}{c}\frac{\partial \vec{A}}{\partial t}$$

If there are no free charges, then the electric potential is $\varphi = 0$; and the electromagnetic field vectors are expressed in terms of a single vector potential $\boldsymbol{A}$:

$$\vec{H} = rot\vec{A} \qquad \vec{E} = -\frac{1}{c}\frac{\partial \vec{A}}{\partial t}$$

satisfying the additional condition:

$$div\vec{A} = 0$$

In classical electrodynamics, the vector potential has often been treated as a quantity that does not have a direct physical meaning, formally introduced only for the convenience of computations.

Although already in the structure of the "action" for classical electrodynamics, the vector potential enters in such a direct way that it suggests its fundamental character. It leads, but does not promote.

In quantum theory, this has a transparent physical meaning of the direct effect of the vector potential on the phase of the wave function of a particle moving in a magnetic field.

Moreover, it was possible to put quantum experiments that showed that the vector

potential is accessible to a rather direct measurement in a certain sense (at least, we are talking about the fact that a vector potential can influence the measurable image on a quantum particle even when the magnetic field intensity in the regions , accessible to the particle, is everywhere zero, that is, the magnetic field can not affect the particle through the intensity, but only directly - through the vector potential, see the Aaronov-Bohm effect.

Just as the scalar potential is related to the concept of energy, the vector potential reveals a close connection with the concept of momentum.

Relative to the gravitational field, the generalization is as follows. Since the rotor of the gradient is always zero, the rotor of the gravitational field is always zero.

$$rot(grad\Psi) = 0 \Rightarrow rot\vec{g} = 0$$

The apparent similarity of the electromagnetic field with the gravitational field consists in the fact that they both decrease with distance. Moreover, the intensity of a purely electric field (Coulomb's law) decreases in exactly the same quadratic law as the gravitational pull (the basic law of gravity). This is the reason for many erroneous judgments, such as the popular in cheap alternative physicists judgments that gravity can be expressed through an electric or magnetic field. As will be shown below, the difference between the electromagnetic and gravitational fields is fundamental.

The difference between the electromagnetic field and the gravitational field is as follows. The rotor of the electric or magnetic field (see Maxwell's formulas) inevitably carries with it, respectively, a magnetic or electric field. For this reason, the electric field is always combined with the magnetic field into one field: electromagnetic. That's what it is in photons, radio waves and wherever. In this case, the electromagnetic field in no way affects the gravitational field. While the rotor of the gravitational field is hopelessly and uniquely always equal to zero. And nothing else. And no external force of the rotor of the gravitational field can be made neither positive nor negative.

But this is not the end. There is a beautiful, purely mathematical operation that sheds special light on the difference between the electromagnetic field and the gravitational field.

4. The Helmholtz decomposition.

A mathematician, Helmholtz, may benefit from it, or maybe for fun, invented and proved the following theorem. For any vector field $\mathbf{W}$ there exists an expansion of this field into two independent fields $\mathbf{U}$ and V, which have the property that

$$W = U + V \quad \text{Where } div\ U = 0\ ;\ rot\ V = 0\ ;$$

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This theorem probably had some applied applications. But she was waiting for her star application. She was waiting for the Theory of the Elastic Universe.

For reference. Herman Ludwig Ferdinand Helmholtz (1821-1894) is a German scholar, even a foreign correspondent member of the Petersburg Academy of Sciences (1868).

Unfortunately, biographical publications have written a lot about his work in medicine, biology, in the direction of science, but in what year he proved this decomposition is not mentioned. However, it is clear that more than 100 years ago.

As it turns out in more than 100 years, it is in this expansion of the vector field that there is a fundamental difference between electromagnetism and gravitation. And, by the way, the impossibility of gravitational waves.

5. The essence of the Theory of the Elastic Universe. Short and accessible.

The universe is an infinite elastic medium, "jelly." Not ether, in which the elements can move, but jelly, which does not allow the elements to shift. Or in terms accepted 10 years ago, the Universe is Gukuum. In the gukuum there is an infinite movement of all kinds of waves. Infinite in time and in space. In this case, all kinds of matter, elementary particles, fields, photons, neutrinos, etc. - these are all the different types of wave formations in Gukuum. That is, the universe is described by one - the only equation, the wave equation:

A single formula of all matter, all Particles, all Fields and all Quantums of our Universe:

$$\frac{\partial^2 \mathbf{W}}{\partial t^2} - c^2 \Delta \mathbf{W} = 0;$$

$\overline{\mathbf{W}}$ - displacement vector elastic space

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W is the displacement vector in Gukuum, a field of very small displacements, oscillations relative to the equilibrium point. Infinite in space, but very small in amplitude, maybe even zero, and then the universe is a game of pure strains in gukuum without deformations.

At the end of the article, mathematical formulas are given for the four main types of material formations. Although in real life there may be more.

6. We apply the Helmholtz theorem to the displacement field in the gukuum W!

We apply the Helmholtz theorem to the vector field W, which is the entire universe. This is the displacement field in the gukuum, the vector wave field.

$W = U + V$ Where $div\ U = 0$; $rot\ V = 0$;

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And we make a bold assumption.

We interpret the value of $\boldsymbol{U}$ (up to constant coefficients) as the vector potential of the electromagnetic field $\mathbf{A}$, and the quantity $\mathbf{V}$ as the vector potential of the gravitational field $\mathbf{g}$. The value of $\mathbf{V}$ up to a constant coefficient can be interpreted as carrying in itself the intensity of the gravitational field. However, for rigor, subsequently, it is necessary to sweep the dimensions, coefficients, systems of units, etc.

The statement is quite obvious, since we remember well from physics that practically all the equations of physics, including the quantum Schrödinger equation, reduce to a wave equation. Everything in the universe is vibrating. And matter, and field, and magnetic, and electrical. And even the gravitational waves of British scientists have almost determined, they have only the sensitivity of the detectors is not enough. A few billion more injections and they will promise them soon to determine.

So, as a result of the Helmholtz decomposition, we get two fields, $\mathbf{U}$ and $\mathbf{V}$, which are surprisingly similar to the vector fields $\mathbf{A}$ (electromagnetic vector potential) and $\mathbf{g}$ (gravitational vector potential) available in the real world.

The dimensions of $\mathbf{A}$ and $\mathbf{g}$ coincide, and Maxwell's equations from Hooke's equations (vector) and vice versa are easily obtained. The properties of the other vector $\mathbf{g}$ are such that they coincide with the basic properties of the gravitational field (the rotor is zero). This correspondence between $\mathbf{U}$ and $\mathbf{V}$ on the one hand and $\mathbf{A}$ and $\mathbf{g}$ on the other hand is sometimes even stated in the literature, although the physical meaning as a component of bias in the gukuum has not been established by anyone.

For the vector potential $\mathbf{A}$ itself (in the absence of charges and currents), the wave equation:

Vector potential A
of electromagnetic field

$$\frac{\partial^2 A}{\partial t^2} - c^2 \Delta A = 0;$$

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Recalling the equation for the displacement $\mathbf{W}$ of the gukuum, we conclude that the vector potential $\mathbf{A}$ from electrodynamics is the same component of the displacement vector $\mathbf{W}$ for which div$\mathbf{A}$ = 0.

This is the fundamental connection between the Maxwell equations and Gukuum theory. This is how the cumulative chain of formulas that connect the Gukuum theory with the electromagnetic and gravitational field.

$\boldsymbol{W}$ - displacement vector of elastic space

The Helmholtz decomposition:

$\boldsymbol{W}=\boldsymbol{A}+\boldsymbol{g}$	where	$div\boldsymbol{A}=0$	$rot\boldsymbol{g}=0$

$\boldsymbol{A}$ - Vector potential of electromagnetic field	$\boldsymbol{g}$ - gravitational vector field.
$\boldsymbol{H}=rot\boldsymbol{A}$ - magnetic field vector	$\boldsymbol{g}$ - vector of gravitational field strength.
$E=-\frac{1}{c}\frac{\partial A}{\partial t}$ - electric field vector	$rot\boldsymbol{g}=0$
Maxwell's equations:	Newton's law of gravitation:
1) $rotE=-\frac{1}{c}\frac{\partial H}{\partial t}$	$g=\frac{\gamma \bullet m}{R^2}$
2) $rotH=\frac{1}{c}\frac{\partial E}{\partial t}$	$F_{1,2}=\gamma\frac{m_1 \bullet m_2}{R^2}$
3) $div\boldsymbol{E}=4\pi\rho$	The gravitational field is a gradient of some gravitational potential φ :
4) $div\boldsymbol{H}=0$	$\mathbf{g}=grad\varphi;$

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The vector electric potential, through which the electric intensity and the intensity of the magnetic field are expressed, is uniquely related to the displacement of the gukuum (according to Gukuum theory) having the dimension "cm". And the formula for this vector electric potential is the wave equation, as in the theory for displacement in an elastic body. Hence it is possible to express the TRUE dimension of all electrical quantities that someday will also be done. For at the present time the dimension of all electrical quantities is simply ridiculous, it contains square roots of mass. All this happened because of the unsuccessful choice of the initial definitions.

Why is this idiocy entrenched in the present physics, that in the dimensions of all electric fields and charges the square root of the mass sits? - He sits because in the definition of charge sits the force (and in the dimension of the force - automatically there is a mass) equal to the mutual attraction of two charges, that is, to their product, that is, the square of the charge. And naturally, when a root is extracted from this square, a root is obtained from the mass. But why does not this happen with the law of gravity? There is also a product of two masses? - There all corrects the gravitational constant. So why not introduce an "electrical" constant? And then the dimension of the electric charge would contain the mass in the first degree, which is more natural. It seems that this electric constant will someday be introduced.

Another argument for the theory of gukuum.

We have often reproached ourselves and are reproached on the Internet for the fact that so far in Gukuum theory we have not advanced in identifying the electric field and electric charge. And in fact, we found the mass distributions in loks (elementary particles), found the momentum distributions (spins), so what's the matter? Why did they stop?

Well, the main reason for our 10-year standstill is the lack of funding and the need to fight for a piece of bread, instead of solving global problems. And further on the subject of the Electric Field and the Electric Charge, let us state the following considerations.

1) There is a solid mathematical theorem: if two regular functions coincide on an arbitrarily small cut (by argument), then they coincide on the whole domain of the argument (!). Regular - this means having all the derivatives to infinity and all of them are continuous.

As applied to our case, in a purely physical sense, we affirm the following.
- If for one regular function to consider our Mother - Nature, which is undoubtedly regular everywhere, without jumps and breaks. (Nature does not tolerate emptiness ...).
- If we assume localized solutions of the Wave Equation for another regular function, which are also undoubtedly regular in their domain of definition.
- If for the "cut-off" on which these two regular functions coincide, consider all the coincidences of the parameters of loks with the parameters of real particles, as well as the explanation of many physical phenomena within the framework of the Gukuum theory, in particular,

1) the presence of a core in a proton and a neutron;
2) the distribution of masses within elementary particles;
3) the explanation of the phenomena of ball and even lightning;
4) explanation of the phenomena of electromagnetic induction and all electromagnetic phenomena;
5) the proposal of three classes of exact formulas for explaining the arrangement of all

elementary particles, a photon, a neutrino, a ball and an even lightning;
6) the proposal of the corresponding three tables of elementary particles, including all known elementary particles;
7) something else not mentioned,
- Then we can safely say that these two regular functions, Nature and localized solutions of the Wave Equation, these two regular functions completely coincide on the whole domain of their definition.

That is, until the fragments of the present available (fragmentary) physics have been studied, they will sooner or later be identified in Gukuum theory, that is, within the framework of axiomatic physics arising from a single formula of the universe - the wave equation. Including all electrical phenomena. Sooner or later.

Well, in addition, we point out the following aspects.

- All electrical parameters are parameters that reflect the interaction of particles (loks). If the mass or size or spin of a particle (lok) can be measured (calculated) from a single particle, then the particle charge (lok) is determined in the interaction of particles (loks). We have not yet studied the interaction of loks. We do not quite understand yet, where does this interaction come from.

However, from the available observations, we note that there are substances through which photons penetrate unimpeded. There are substances that trap photons. And there are substances that are semipermeable for photons. Taking into account the wave properties of all particles, we can state that there are substances that are transparent not only for photons, but also for protons - neutrons - electrons. These phenomena of permeability of substances are very close to the phenomena of interaction of particles with each other. Why do not loks jump freely through each other in Gukuum theory? - The essence of the phenomenon is that there is a component of the stress tensor in the lok, which is able to act on some component of the stress tensor in the other lok. Perhaps the role of the law of winding plays a role here. Or maybe without this law there are some elements of loks that cling to each other. Here it is necessary to think and think ...

There is such a consideration (!). Usually the wave propagates rectilinearly. But mathematics proves the existence of localized waves. If there are components of the stress tensor that TURN a localized wave, then these components will cling to each other when interacting with loks!

Of course, it is not difficult to come up with a combination under the integral over space, resulting in something of a dimension coinciding with the charge of an electron or a proton. Similar combination for spin, this combination is seen to be the closest to the charge distribution and the definition of the integral charge of a particle. However, we are refraining from this hasty step until better times, when it will be possible to calmly and deeply think about the causes of the electrical interaction and simply repulsion of uncharged particles. On the causes of transparency in one case, translucency in the other case and full opacity in the third case.

The idea of identifying charges can be to find, for example, the energy of the system "proton + proton" or "proton + electron" starting from the primary wave equation and the total displacement for two particles in Gukuum. The second idea is to determine the electric field of an electron or proton from its expression through a displacement in Gukuum and dimensional considerations. So, the electron and other particles are localized wave objects. These objects are characterized mainly by the volumetric distribution of the amplitude of oscillations of the carrier-gukuum and the shape. And now. it turns out that on the basis of the volume distribution of the wave amplitude it is

possible to form several derived quantities from it. 1) The integral over the space of the square of the wave amplitude - this gives the mass of the electron. And the very distribution of the square of the amplitude - gives the density distribution inside the electron. 2) The integral over the space of the product of the wave amplitude at a distance from the axis of symmetry gives the spin, and the integrand itself is the distribution of the spin in space. 3) Another combination, in order to obtain an electric charge in the integral, is supposed to be composed as follows: the combination for energy must be multiplied by the distance from the center of the particle. In this case, as a result of integration, it is possible to obtain a square of the charge. Such a solution is chosen from dimensional considerations. Both versions are calculated in formulas and graphs. While this has not been tested, there is no time.

It can be noted that, with the experimental results on the charge density, the integral of the spin density (the spin increase graph) and the spin density proper also correlates well enough. There are no global conclusions, except for some visual similarity, the correlation of graphs.

Possibility of antigravitation.

Recall that we are talking about the model of the universe as an infinite, homogeneous elastic medium. In such an environment, localized wave objects are possible. These objects are nothing more than elementary particles. Everything is proven strictly mathematically on the previous pages.

The gravitational field can be identified and analyzed based on the basic solution of the wave equation and the formulas connecting the displacement in gukuum with the vector potential of the electromagnetic field **A**, determined from the Helmholtz decomposition:

$W = U + V$	Where $div\ U = 0$; $rot\ V = 0$;
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(31-1)

The value of **U** can be interpreted as carrying in itself the vector potential of the electromagnetic field **A**, and the value of **V**, accurate to a constant coefficient, carrying the gravitational field in itself.

Then follows an interesting and obvious hypothesis.

On the possibility of creating an anti-gravity field.

So, there is the simplest version of the origin of the gravitational field. This - "inflation" loks elastic space, leading to the emergence of a constant radially directed stress. But here comes another version.

As mathematics shows, in the stress tensor in an elastic body there may exist components that "twist" the stress wave (deformations) and cause it to move around the axis. In this case, the wave rotates around the axis, creating localized wave objects - in my loks terminology. Examples of such localized wave objects are elementary particles. This theory, confirmed by

rigorous mathematics, but (yet) has no illustrations. True, there are such objects as solitons that have been studied by many scientists. But solitons are movements of masses of matter, they can not "layer" themselves on themselves. And lok - in them the whole mass is immovable, and only the wave of stress is spinning.

But! Attention!

It turns out that long ago there are analogues of loks on water. Water analogs of localized wave objects, which we assume in the elastic space, are described. There are flat analogs - this is the argument in favor of the theory of the Elastic Universe!

So even more than a century ago, J. Scott Russell observed "solitary waves" in the form of a hill on the surface of the water. The physical meaning of this hill is very interesting and consists in the fact that here an analogy is opened with both the formation of elementary particles and with the appearance of a gravitational field!

So, under the external influence, a localized transverse sound wave appears on the water. This wave (sonic!) Winds around the vertical axis and draws (!) Into itself surrounding water. Thus a hill is formed on the surface of the water. The circular wave that forms this hill is an analog of an elementary particle. Forces pulling the surrounding water to the center of the hill - this is an analog of the gravitational field. And here the hill itself is like a "dyed chromosome" as it serves to visualize hidden from the eye wave processes in the water.

What are these external influences that result in a circular stress wave? - It is possible when one obstacle is bent by one wave and some subsequent overlays. This can be an (oblique) collision of sound or shock waves in water. Or the collision of a direct wave with its reflection from something (from a rock on the bottom). Or the presence in this collision of some body floating on the surface of the water. The fact is that these hills were observed experimentally. And these experiments must continue!

It is not necessary to connect the formation of such a hill with the movement of masses of water. The motion of the masses of water here can be neglected. In addition, in the circular motion of water masses, not hills, but pits, funnels, and breakers are formed. But with the cyclic rotation (sound) of the elastic wave inside the water, it contracts to the center and forms a hillock. It is these forces, which pull water to the center of the water hill, and are analogues of the gravitational field.

Initially, many years ago we believed that in the theory of the Elastic Universe, gravity appears as a natural "inflation" of the medium when a localized wave formation appears in it.

Then we had the idea that gravitation in the universe appears by a mechanism analogous to the mechanism of formation of hillocks on the water.

But if this is so, then with the help of electrically conductive windings, it is possible to create a configuration (such as in an electric motor), which, by passing a current through it, will effectively draw in itself an elastic vacuum (we have gukuum). Just like water is drawn into the water mounds. That is, we will get anti-gravity.

This is the fundamental task for inventors. We alone can not invent everything. Einstein invented little. And Edison invented a lot, but he did not discover the theory of relativity. Once Russian officials and the inventor of the steam engine Kulibin were sent on all four sides. Then people regretted it. Yes, everything in Russia was sent: both genetics and cybernetics. But we do not for the future.

It is urgent to tackle the invention of the antigravity apparatus on the principle described here.

7. But that's not all!

Well, it would seem that we found some basic principle of the general theory of all fields. Perfectly. But ... As the further, in-depth scientific analysis shows, fields do not exist at all !!! None! Neither electromagnetic, nor gravitational.

How so? From what? Why? On what occasion?

The answer is this. All that is in the universe, in the gukuum, is purely localized, vortex-like wave formations. Their central parts, the clusters of waves themselves, are perceived by us as elementary particles, photons, ball lightning, even lightning. But the peripheral, remote parts of these elementary particles are what we perceive as fields! And these fields are not homogeneous objects. These all electromagnetic and gravitational fields are alternating oscillations of the gukuum, with enormous frequencies and light propagation velocity. These peripheral areas swirl just like the central ones around the centers, i.e. around elementary particles. And only as a result of averaging many oscillations Coulomb's law is obtained. And only as a result of the movement of electrons, their peripheral parts begin to tickle the surrounding objects, which is perceived as a magnetic field around the conductor with current.

8. What about the elementary particles?

And the elementary particles are solutions of the same wave equation for $\mathbf{W}$ (see above). But not simple (like waves of sound), but localized! There is such a class of solutions, and not one. At least 4 classes of localized solutions are found. This, in particular:

- Class 1. This class of solutions defines localized wave objects moving at light speed. Specifically: photons, neutrinos, and possibly other, not yet known in science education, moving at the speed of light. General formula for objects moving at the speed of light:

The displacement formula for objects moving with speed of light (photons, neutrinos, etc.):

$$W_i(r,\theta,\varphi,t) = \frac{C^i_{j,m}}{\sqrt{r}} \bullet J_{j+\frac{1}{2}}(kr \pm \omega t) \bullet Y_{j,m}(\theta,\varphi)$$

k - Wave number. i=1,2,3 (cartesian); j,m - 0,1,2,...;

$C_{j,m}$ - Arbitrary; $\omega = c \bullet k$; c - Speed of light.

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- **Class 2.** This class of solutions defines "inactive" localized wave objects. And specifically: all the elementary particles known to us, the proton, the neutron, the electron, the mesons, and so on. And other elementary particles, not yet known in science.

Solenoidal solutions. In such a wave
All energy moves around the axis. This
The class of solutions defines elementary
particles: a proton, a neutron, an electron, mesons, etc.

$$W(r,\theta,\varphi,t) = \frac{C_j}{\sqrt{r}} \bullet J_{j+\frac{1}{2}}(kr) \bullet P_j^m(\cos\theta) \bullet$$

$$\bullet \sin(m\varphi - \omega t)$$

k - Wave number. i=1,2,3 (cartesian);

j,m - integer; C_j - Arbitrary;

$\omega = c \bullet k$; c - Speed of light.

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- **Class 3.** In such objects, the energy does not rotate around the axis, but around the imaginary toroidal core, with the entrance into the toroid. We call such localized oscillations toroidal. Their research is also a separate issue. It seems that in toroidal coordinates this will be simpler, more beautiful and there will be no singularities.

Hypothetical formula for objects like spherical
Lightning (in spherical coordinates):

$$W(r,\theta,\varphi,t) = \frac{C_j}{\sqrt{r}} \bullet J_{j+\frac{1}{2}}(kr) \bullet$$

$$\bullet (P^*_{j,m} - Q^*_{j,m}) \bullet \sin(m\varphi) \bullet \sin(m\theta - \omega t)$$

Here $\overline{W}$ – displacement vector of the elastic element space gukuum.

k - Wave number. i=1,2,3 (cartesian);

j,m - integer; C_j - Arbitrary;

$\omega = c \bullet k$; c - Speed of light.

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I remember the ball lightning. Here its field (not purely electromagnetic!), Rolled up with lightning (this process is assumed by us at the formation of ball lightning, see below) as the fingertip from the finger (or according to Lermontov, as the thimble of debauchery) just turns out to be toroidal. Thus, we can assume that the above is the proposed formula for ball lightning (naturally, in spherical coordinates).

- Class 4. Solution in cylindrical coordinates. This solution mathematically should be a

kind of endless garland of sausages along the Z axis. And if it is physically feasible, then it is very likely that this object will turn out to be an Anniversary Lightning.

The hypothetical formula for objects of the type lightning (in cylindrical coordinates):

$$W_i(\rho,z,\varphi,t) = c_i e^{\mu i k z} \bullet Z_m(\rho\sqrt{k^2+K^2}) \bullet$$
$$\bullet (a\cos m\varphi + b\sin m\varphi) \bullet \cos(\omega t + \gamma)$$

This solution should be mathematically a kind of endless garland of sausages along the Z axis.

Here $\overline{W}$ – displacement vector of the elastic element space gukuum. i=1,2,3 (cartesian); m - integer;

$c_i,\ \gamma,\ k,\ K$ - arbitrary;

$\omega = c \bullet k$; c - Speed of light. Z - Arbitrary

Cylindrical Bessel functions of the first kind.
These are sinusoidal cylindrical waves.

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9. Afterword.

The farther the events go, the clearer it becomes, to whom it was needed and what was the cause of what. That is, who and why it was necessary to strangle my discoveries. Now I am firmly and unequivocally confident in everything. All that followed in the world science after March 2003 is a dramatization. And the artificial inflating of some geniuses, with incomprehensible what achievements, which have no practical significance. And the departure of these geniuses from publicity, because they would be necessarily asked about my theory. And why in 2004 was introduced ubiquitous (in all countries!) Allegedly reviewing, ostensibly to combat the "viola". My messages were mercilessly chopped and deleted at all forums. And they banished me.

Who strangled me like a scientist? You could also specifically name the names of the performers, but there are too many of them and they just silly performed what they were ordered from above. First and foremost, these are all our "nuclear engineers" who, under the mute about the controlled fusion, scrape huge sums out of the budget. First of all, our most untwisted nuclear scientist, who, like in the well-known film, was put forward in the 60's even without a dissertation. And since then they can not push back. Billions of dollars, he lets go a cat every year. And the result was not and never will be. At least for the reason of all of them, that there were gathered, lack of talent. In the same place all the bad guys. And who could solve the problem, there will never be missed there. Well, the system is like that. This is the law: if there is a feeding trough, then the strongest ones get to it, but not the smartest ones. It's a huge problem to make sure that the smart could get through to financing. Publications, recommendations, dissertations, all this works only on rogues.

I already answered in discussions about the comparative importance and value of my theory and theories of some well-known, not so long ago recognized "geniuses". I repeat here. These "geniuses" titanic labor as it were proved that the watermelon is still spherical. That he is not a bagel, he has no holes. If there is any proof at all. And that's all. However, newspaper scribes have already been given their results archival for

science, and he himself has already been given the supernatural alleged power over the universe, supposedly the ability to control the universe! Imagemakers created them a halo of significance and sublimity over mere mortals. There is nothing of this. This is a lie from beginning to end.

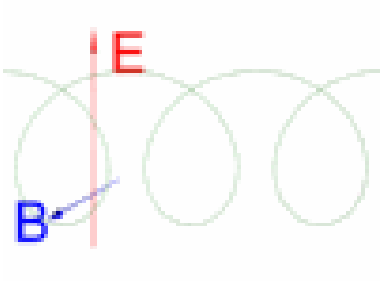
On the other hand, the theory of gukuum seems to prove and explain all the insides and all the taste qualities of watermelon. And also teaches how to grow, store and transport them. So let the readers decide what is more important. However, such malicious actions in science have always been. Destroyed geniuses, geneticists and cybernetics. They inflicted huge losses on the country for the sake of personal greed and ambition. As in the well-known anecdote: I do not eat, so at least I spit or gibberish. We also remember the "right of the first night" of the noble masters of the past, so cute played at the Satire Theater. The first night rogue have already done with my theory. And they continue to do this for 10 years. Letters to the presidents do not reach, and instead of replies, insulting letters from anonymous authors begin to be poured ... And precisely on the e-mail from which the letter was sent to the president. There, all kinds of scoundrels, scoundrels and rascals around the presidents gathered and live.

The theory presented here could bring and accelerate the cognition of the world. I could save tens of billions of dollars on this path to mankind. Many dozens. And it will save hundreds of billions of dollars. But instead of this, there is a breakdown of the whole civilization and world culture and science. Instead, some obscene delirium, black holes, ethers, dark matter, dark energies, antimatter, big explosions, Higgs bosons, decays of mesons into muons, quarks, strings, superstrings and branes, supersymmetries, entangled particles, exotic particles, magnetic monopoles, tachyons, wormholes in space, temporary corridors and time travel, "condensates of the eye" and other delirium.

And by and large, a crime is committed against humanity. Because the non-renewable resources are being squandered. The knowledge of the universe in which we all live is inhibited. And maybe there are actions that will be late to correct.

That's how Academician Alexandrov said in his speech. "Previously, I knew that nuclear energy could be used for peaceful purposes or in military, but academician Velikhov figured out how to use nuclear energy for personal purposes."

The only meaning of the existence of mankind, if such a term is admissible, is to know the nature, the universe, itself. Only knowledge will help us to save ourselves and save ourselves from possible disasters.



Опубликовано:
https://www.academia.edu/34560190/A_unified_theory_of_all_fields_and_all_kinds_of_matter

16. Estimates of the physical properties of a gukuum.

Abstract. The mechanical parameters of gukuum are calculated: density, elasticity. A comparison with similar parameters of elastic materials is made.

It remains to find the Lamé coefficients for the gukuum. It's time to "feel" Gukuum. For this, there are all possibilities. We consider the most reliable particle: a neutron. But you can also consider the proton. Earlier, the inaccuracy of the coefficients of the proton was noted, it is not symmetric. And the electron is not sufficiently identified, because there is little experimental data.

We take the previously obtained formulas for the localized energy.

The energy of the lok (j,m) in the general case:

$$E_{j,m} = K^{E}_{j,m} \bullet \pi k^2 \bullet (L_1 + L_2)$$

$K^{E}_{j,m}$ - coefficient obtained after solving the equations.

k - wave number. j=0,1,2,3,...; m=0,1,2,...,j;

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and angular momentum Lok

Spin of the lok (j,m) in the general case:

$$M_{j,m} = K^{M}_{j,m} \bullet \frac{k(L_1 + L_2)}{c}$$

$K^{M}_{j,m}$ - coefficient obtained after solving the equations.

k - wave number. j=0,1,2,3,...; m=0,1,2,...,j;

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Take ***j = 1, m = 0*** (neutron). The left side of equations substitute actual energy values ***μ c*** ^{2} neutron and spin ***ž / 2*** neutron. We get the original two equations with two unknowns for the neutron.

The system of equations for determining parameters of the elasticity of the gukuum at the base formulas for the neutron:

$$\mu_n c^2 = K^E_{1,0} \bullet k^2_{1,0} \bullet (L_1 + L_2)$$

$$\frac{\hbar}{2} = K^M_{1,0} \bullet \frac{k_{1,0} \bullet \pi \bullet (L_1 + L_2)}{c}$$

on the left side, respectively, energy and spin of neutron; $k_{1,0}$ - wave number of the neutron; $K^E_{j,m}$ и $K^M_{j,m}$ - coefficients obtained after solutions of the corresponding systems of equations (look at (1-36*) и (1-37*)) j=0,1,2,3,...; m=0,1,2,...,j;

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(1-59) (1-60)

Solution of these equations is (with regard to (1-51)):

Parameters of the elasticity of the universal gukuum (the sum of the Lame coefficients) (L_1+L_2):

$$(L_1 + L_2) = \frac{\hbar \bullet c}{2 \bullet \pi k_{1,0} \bullet K^M_{1,0}} =$$

$$= \frac{\hbar^2 \bullet K^E_{1,0}}{4 \bullet \pi \bullet (K^M_{1,0})^2 \bullet \mu_n} \cong 0{,}032 \bullet \frac{\hbar^2}{\mu_n}$$

$k_{1,0}$ - wave number of the neutron; $K^E_{j,m}$ и $K^M_{j,m}$ - coefficients obtained after solutions of the corresponding systems of equations

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(1-61)

Here's how to relate to each other elastic properties Gukuum, neutron mass and the Planck constant! Planck constant determines the elastic properties Gukuum (vacuum traditional physics). And vice versa.

From (1-61) to be a numerical evaluation of the elastic properties Gukuum:

$$(L_1+L_2) = 0{,}19 \cdot 10^{-32}$$

(1-62)

(in the CGS system).

This is followed by evaluation of the density Gukuum. In accordance with the laws of elasticity:

Estimation of the density of the universal gukuum from the formula for the speed of light as transverse wave in an elastic medium:	
$c = \sqrt{\frac{L_2}{\rho}}$	$L_2 = \rho c^2$
$\rho_\Gamma = \frac{L_2}{c^2} \le \frac{L_1 + L_2}{c^2}$	
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(1-63)

Or in units of the GHS:

$$\rho_{gukuum} \approx 0{,}21 \cdot 10^{-53}$$

(1-64)

p - density Gukuum. This is only an upper bound Gukuum density, and the bottom can be equal to zero. Analysis is delayed.

As is evident from the formulas (1-62) and (1-63), the elasticity and density Gukuum are negligibly small compared with any terrestrial substance. At first glance, a paradox. Worthless density and elasticity of the carrier, but brings enormous energy. Is it possible that the elastic parameters of the object formed on the swing Gukuum dozens of orders higher than the elastic parameters of the media? It's shocking. Compare with earth substances. Here is an elastic material: steel. For steel $L_1 \approx L_2 \approx 10^6$; $\rho_{steel} \approx 10^1$; and

Substance	Steel	Gukuum
Parameter	$L_1 \approx L_2 \approx 10^6$; $\rho_{steel} \approx 10^1$;	$(L_1+L_2) = 0{,}19 \cdot 10^{-32}$; $\rho_{gukuum} \approx 0{,}21 \cdot 10^{-53}$
Square speeds transverse waves	$\frac{L_1 + L_2}{\rho} = 10^5$	$\frac{L_1 + L_2}{\rho} \ge c^2 = 10^{21}$
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(1-65)

That's due to which the speed of light is many times greater than the speed of sound in steel. So that a more "bouncy", 10^{21} or 10^{5} ? Here it is where the relative actually. Which ether vortices can give the same ratio?

It remains unknown what is each of two Lamé coefficients for Gukuum. It is possible to make an assessment. For steel $L_1 \approx L_2$. If this is true for Gukuum then

$$L_1 \approx L_2 = 0{,}95 \cdot 10^{-33}$$

(1-66)

(in the CGS system)

, however, why it should be $L_1 \approx L_2$? What if $L_1 >> L_2$? That is Gukuum easy to shift, but very heavy compression? Suddenly it is a liquid? It should be remembered that even if gukuum = liquid, it is not about movements and vortices of fluid, and an *elastic waves* in the liquid. But this assumption **does not hold water** . Light on all the known experimental results - transverse wave. It is this direction in the vectors of the electric and magnetic field of electromagnetic waves. A transverse waves are possible only in a solid. Liquids, gases and esters allow only longitudinal waves, compression waves.

It is possible that Gukuum incompressible, as expected already in [25]. The formula still allow this possibility. In this embodiment, evaluation for density Gukuum absent.

So Gukuum proved easiest as ether. But resilient with respect to both compression and shear (torsion) and able to carry the enormous energy through its oscillations. If there were no elasticity to shift, there would be no light. There would be elementary particles.

It is worth noting *special* moments of the new theory.

First, as just mentioned: it is possible that Gukuum absolutely incompressible and all of the observed man-made objects have only a tense game. It may well be that our reality is virtual! This is the first game of zeros - zero strain.

Secondly, it appears that on this virtual ends. Opening Law "winding" contributes to the energy integral counting special functional factor $1 / r^2$. Without this factor, the energy integral "one turn" does not converge. That is, no matter how small constant ***the*** C_j or take in the solution (1-2), the integral of energy is still infinitely large in magnitude. So this constant physical zero! That is, a single localized wave, one of its round, has a zero amplitude! Another virtual reality. Another game of zeros! *It turns out that all that is in the universe - it zeroes game.*

2007.01.05. Addition. In order to establish the relationship between L_1 and L_2 it has been suggested that this ratio must somehow correlated with the same ratios in solid material substances. We have already mentioned material - steel, but I want more convincing. We took a table of the elastic properties of the [39] . There is something there, something we dovychislili the formulas of the theory of elasticity.

MODULUS E , Poisson's ratio σ and a coefficient Lame L_1 and L_2 FOR VARIOUS SUBSTANCES MATERIAL. From material from [39].

When calculating the elasticity to use the formula:

$$L_1 = \frac{E\sigma}{(1-2\sigma)\bullet(1+\sigma)} \qquad L_2 = \frac{E}{2\bullet(1+\sigma)}$$

$$L_1 = \frac{L_2 \bullet (E - 2L_2)}{(3L_2 - E)};$$

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Elasticity parameters of various substances.

The name of the material.	Elastic modulus ***E*** kg/cm^{2}x10^6	Poisson's ratio σ	Coefficient Lame L_1 x 10^6 kg/cm^2.	Coefficient Lame L_2 x 10^6 kg/cm^2.
1	2	3	4	5
Cast iron gray, white.	1,35	0,25	0,54	0,54 (0,45)
Carbon steel.	2,05	0,26	0,881	0,813 (0,81)
Alloyed steels.	2,1	0,275	1,007	0,824 (0,81)
Copper laminated.	1,1	0,325	0,771	0,475 (0,4)
Copper is cold drawn.	1,3	-	[0,922]	(0,49)
Phosphorous bronze rolled.	1,15	0,335	0,874	0,431 (0,42)
Brass is cold drawn.	0,95	0,37	0,987	0,347 (0,36)
Ship brass brass.	1,0	0,36	0,945	0,368
Manganese bronze rolled.	1,1	0,35	0,951	0,407 (0,4)
Aluminum rolled.	0,69	0,34	0,547	0,257 (0,265)
Aluminum bronze, casting.	1,05	-	[0,42]	(0,42)
Duralumin is rolled.	0,71	-	[0,459]	(0,27)
The zinc is rolled.	0,84	0,27	0,388	0,331 (0,32)
Lead.	0,17	0,42	0,314 (-0,446)	0,06 (0,7)
Ice.	0,1	-	[-0,094] ?	(0,029)
Glass.	0,56	0,25	0,224	0,224 (0,22)
Concrete at ultimate strength:				
at 100 kg/cm^3	0,17	0,17	0,037	0,073
at 150 kg/cm^3	0,19	0,17	0,042	0,081
at 200 kg/cm^3	0,22	0,17	0,048	0,094
A tree along the fibers.	0,11	-	[0,0] ?	(0,055)
Rubber	0,00008	0,47	0,000426	0,000027

NOTE. 1) Most of the values in columns 4 and 5 calculated on the basis of data from columns 2 and 3. No brackets are not used.

2) The values in the columns in brackets - calculated based on formulas of elasticity from experimental data from other columns than 2 and 3.

3) The parentheses - the corresponding experimental data.

FINDINGS. 1. quite convincingly seen closeness values in columns 4 and 5. This may be some confirmation that Gukuume $L_1 \approx L_2$. Provided that the initial assumption is correct. What we do not vouch for.

2. Appears assumption that the universe is arranged in such a way that it has no absolute numerical constants. There is only the mutual relationships between the physical quantities and parameters, expressed in terms of other physical relationships and parameters. The basis of everything is the wave equation (which is simply an expression of the law of continuity and resilience of the continuum of the universe). A three coefficients of the elastic Lame Gukuum and all physical quantities (masses of elementary particles field charges the particles, Planck's constant, the constant of gravitation, and so on) are simply linked by certain formulas and have no reference to some absolute numerical values. In other words, the entire visible universe, and the physics - it is nothing more than a game, interference infinitesimal perturbations continuum. The entire universe is unambiguous, and there are no parallel universes.

17. Antimatter. Hasty name and recognition.

How the myth of antimatter was born.

The name "antimatter" arose accidentally. At the beginning of the 20th century, gradually, physicists got acquainted with the achievements of each other, some new terms were adopted. Not necessarily it happened in chronological order. But after decades, the picture of the creation of the myth about antimatter is the following.

1923 year. Soviet physicist D. Skobeltsyn studies the interaction of gamma quanta with the electron shell of an atom. To observe the tracks of electrons, he first used a cloud chamber placed in a magnetic field. This method of recording allowed for the curvature of the track to measure the energy of electrons. The source of *γ*-quanta was located next to the cloud chamber. Analyzing the obtained photographs, Skobeltsyn first obtained a number of new results on the mechanism of the interaction of gamma quanta with an atom: he measured the cross sections for the interaction of gamma quanta with different atoms, and measured the ionization losses during the motion of a charged particle in the medium. However, much more interest was attracted by the trajectories of high-energy electrons not curved in the magnetic field observed in the Wilson chamber. The fact that these trajectories belong to electrons, D. Skobeltsyn concluded from the magnitude of ionization along the track of the particle passing through the Wilson chamber. Skobeltsyn concluded that these tracks belong to the electrons of cosmic radiation, but they do not warp, because have large energies. Soon this hypothesis was confirmed - the tracks did not disappear after the source of *γ*-radiation was removed. The energy of cosmic electrons according to Skobeltsyn's estimates was ~ 1 GeV.

Surprisingly, it turned out that not all particles deviated in a magnetic field in one direction. Some particles deviated as if they had a positive charge. Initially, these tracks were taken as positively charged protons. However, the nature of the ionization along the track was the same as in the case of electrons. In order to understand the nature of these particles, it was necessary to measure the direction of motion of the particles, to measure their energy.

- The young French physicist Paul Dirac, who in 1928 succeeded in deriving a general equation for describing the motion of elementary particles by means of the theory of relativity, came across an interesting feature of his solution. It followed that in addition to the ordinary elementary particles, in principle, there can exist also the same particles, but with a charge opposite in sign - peculiar mirror reflections. This often happens when the formula contains a square of something. For example, if the particle energy is $mV^2/2$, then it means that the particle can move both in the positive and negative directions. Apparently the square of the particle charge was in the formula.

The results of D. Skobeltsyn and his method of detecting particles of cosmic radiation aroused great interest among physicists all over the world. Several laboratories began to create similar installations. In the Cavendish Laboratory, P. Blackett and J. Okkalini were engaged in this, and in the USA experiments with the cloud chamber in a magnetic field were started by a young researcher K. Anderson, who worked under the leadership of the Nobel laureate J. Milliken.

As a result of the experiment (1932), the American physicist Karl Anderson, studying trajectories in the magnetic field of high-energy particles arriving to Earth from space,

with gas molecules, as well as Skobeltsyn earlier, discovered on the photographic plate traces left by particles having the same mass as and an electron, but as if charged positively. It was a trace of an anti-electron, later called a positron, of the first experimentally discovered antiparticle. Thus began the history of antimatter.

In those days, scientists were not too worried about the consequences of adding the prefix "anti-" and did not invest in it a particularly broad sense, except for the behavior of a particle with an opposite charge. However, scientists never really worried about the consequences of their discoveries. But what happened before and after was repeated many times. The writing fraternity, journalists, inflated the notion of "anti-matter" to an absolutely global meaning. Up to the point that romance novels fell between people made of matter and antimatter that could not touch each other to avoid an explosion. And the scientists did not have time and opportunities for a thorough analysis of the causes of such "anti-behavior" of particles and for refuting the conjectures of journalists.

Indeed, what else could K. Anderson suggest at a time when, even according to modern (2013) ideas of elementary particle physics, the electron is indivisible and unstructured (at least up to distances of 10^{-17} cm). No other hypotheses, except antimatter, on the assumption of a structureless electron simply can not exist. To this we can add that only in 1921 the spin and the magnetic moment of the electron were discovered. Quantum physics was just emerging. In 1926 the Schrödinger equation was invented. At about this time, the quantization of the projection of the spin and the magnetic moment on the direction of the magnetic field was discovered. All quantum phenomena, they still look quite strange and unnatural.

All the physics of elementary particles in the 30 years of the last century was still in its infancy.

Conservative and backward part of scientists love meaningful, lofty vocabulary. In addition, the law of obscurantism is known: as soon as it wins, creative processes cease; nothing new is created; and all existing creations of writers, scientists, artists and musicians turn into icons. They begin to cover with gilding and clever ranting sayings. In addition, the obscurantist part of scientists likes to duplicate terms. Each variation, each modification, every new step, every deviation immediately receives a new term. In addition, often all that just opened the scientists, under the pressure of just these scientists immediately inserted into the textbooks and presented to students as a dogma. Students begin their scientific life right away with the development of these new dogmas, which may turn out to be erroneous.

And that's what conservative scientists did about elementary particles and antimatter.

The presence of an antiparticle in each elementary particle is confirmed by the principle of charge conjugation. Each particle, with the exception of a photon and a pion, corresponds to an antiparticle. (Gödel-Occam).

- There is CPT-invariance - it is supposedly the fundamental symmetry of physical laws under transformations involving simultaneous inversion of charge, parity and time. That is, randomly noticed coincidences, in questionable experiments and with a questionable interpretation of these experiments, immediately put on the form of global laws of nature!
- The possibility of the existence of antimatter follows from the "invariance of the laws of nature" with respect to the CPT transformation (see CPT Theorem).
- Due to the invariance of the strong interaction with charge conjugation (C-invariance), the nuclear interaction between antinucleons exactly coincides with the corresponding

interaction between nucleons, which ensures the existence of nuclei from antinucleons ("antinucleus").
- The antinucleus has a mass and energy spectrum the same as in nuclei consisting of the corresponding nucleons.
- Electric charges and magnetic moments of antinuclei are equal in magnitude and opposite in sign to the electric charges and magnetic moments of the corresponding nuclei.
- Due to the C-invariance of the electromagnetic interaction, electromagnetic transitions in the nuclei of matter and antimatter coincide.
- The electromagnetic interaction of positrons and antimatter nuclei should lead to the formation of bound states - antimatter atoms, where the antimatter and matter atoms should have an identical structure.
- Due to CP-invariance of the weak interaction, the mixing of atomic or nuclear states with opposite parity due to them is the same for matter and antimatter.
- The collision of an object consisting of a substance with an object from antimatter leads to annihilation of the particles and antiparticles entering into their composition.
- For a long time it was believed that, due to the similarity of characteristics, particles and antiparticles should take part in similar processes (complete symmetry). Later it was proved that this symmetry is characteristic only of strong and electromagnetic interactions, and for the weak one it is violated. It would be worthwhile to think about, but this was postponed until later and nobody doubted the existence of antimatter.

Ostensibly a positron.

The positron is an e+ elementary particle with a positive unit electric charge, an antiparticle with respect to the electron. The mass of the positron coincides with the mass of the electron.

On modern scientific installations, scientists have been able to accurately determine the mass of an electron and the so-called antielectron-positron. Here are these masses:
Electron: $9.1093829 \cdot 10^{-31}$ kg.
Positron: $9,1093826 \cdot 10^{-31}$ kg.
That is, the mass of a positron is equal to the mass of an electron with very high accuracy.
- Positron charge is +1. The charge of an electron is -1.
- The positron spin is ½. The spin of an electron is ½. As is known, the sign can only have the projection of the spin. And for unknown reasons, the comparison of the projections of the spin of an electron and a positron has not been investigated. Did not pay attention.
- The magnetic moment of the positron is equal in magnitude and opposite in sign to the magnetic moment of the electron.
- In a vacuum, a positron is a stable particle. When a positron collides with an electron, annihilation of the e+ and e- pairs occurs with the formation of γ photons (usually two). In experiments on accelerators in beams of positrons and electrons dispersed towards each other, annihilation of e+ and e- is observed with the formation of heavier particles (hadrons, pairs of photons).

Positronium.

When a slow positron collides with an electron, a bound atomic system-positronium-is most likely formed.

The atom of positronium was first synthesized by M. Deich in 1951.

Again a rather strange attitude of scientists towards positronium as to the atom. After all, in an atom, an electron by mass is thousands of times smaller than a nucleus. And

in positronium, the masses of the electron and the nucleus are the same. Who is spinning around whom? Apparently, too, threw the term to journalists and stuck.

Positrons in nature

In space, positrons (supposedly) are produced by the interaction of gamma quanta and energetic particles of cosmic rays with matter, as well as the decay of certain types of energetic particles. Thus, part of the primary cosmic rays are positrons, since in the absence of electrons they are stable. In some regions of the Galaxy, annihilation gamma lines of 511 keV have been detected, which prove the presence of positrons.

In the solar thermonuclear pp cycle (and also in the CNO cycle), some of the reactions are accompanied by positron emission, which immediately annihilates with one of the surrounding electrons; Thus, part of the solar energy is released in the form of positrons, and in the Sun's core there is always a certain amount (in equilibrium between the processes of formation and annihilation).

Some natural radioactive nuclei (primary, radiogenic, cosmogenic) experience beta decay with positron emission. For example, part of the decays of the natural isotope K occurs precisely along this channel. In addition, gamma rays with an energy of more than 1.022 MeV, arising from radioactive decays, can give birth to electron-positron pairs.

Annihilation of a positron and an electron.

Annihilation of a positron and an electron in positronium is the source of monochromatic γ-photons with an energy of 0.511 MeV. The main sources of positrons are: the creation of pairs of $e+$ and $e-$ gamma-photons of high energies and decay of nuclei (beta processes). The formation of positrons occurs in the reactions of the hydrogen cycle, as well as in the reactions of the carbon cycle. The formation of $e+$ and $e-$ pairs can be caused by the interaction of hard gamma radiation with the magnetic field of the pulsar. At a high temperature ($kT > m_E c^2$), in the thermodynamic equilibrium with radiation, $e+$ and $e-$ pairs should be present, which is typical, for example, for the early stage (supposedly) of the evolution of the Universe.

The annihilation of slow electrons and positrons leads to the formation of gamma quanta, and the annihilation of slow nucleons and antinucleons leads to the formation of several pions. As a result of subsequent decays of pions, hard gamma radiation with a gamma quantum energy of 70 MeV is formed.

The process of collision of a particle with an antiparticle, as a result of which other elementary particles or photons emerge, was called annihilation. The first example of annihilation in physics was the interaction of an electron and a positron with the formation of two gamma quanta.

But conservative physicists love order and analogy. And since the theory of quarks (similarly expressed as a hypothesis, but picked up and inflated by journalists) is already generally accepted, according to which protons and neutrons consist of even smaller particles called quarks. Consequently, both antiprotons and antineutrons consist of antiquarks.

Antimatter. Generalizations of conservative physicists.

Atoms of antimatter have not yet been observed. In experiments with accelerators, the events of formation (supposedly) of light antinuclei in hadron collisions were recorded.

The particle and antiparticle have the same mass and lifetime equal in vacuum. Their charges are equal in magnitude and opposite in sign. Spin particles and antiparticles

are the same.

The positrons and antiprotons observed in cosmic rays can be explained by their production in collisions of high-energy particles without invoking hypotheses about the existence of macroscopic antimatter regions. In favor of this indicates the absence of antimatter nuclei in cosmic rays. Direct astronomical observation of a remote cosmic object because of the identity of the spectra of electromagnetic radiation of atoms of matter and antimatter does not allow us to establish whether this object consists of matter or antimatter. The astronomical manifestations of stars from matter and stars from antimatter should be the same.

There are very few experiments on antimatter. All results are obtained at the level of 1 element according to the periodic table. Not even the elements themselves, but only their nuclei. The interaction between different elements consisting of matter and antimatter has not been studied and not detected. That is, for example, the interaction between hydrogen and anti-lithium has not been studied.

Thus, all the results on antimatter, in principle, are fully understandable within the framework of ordinary physics, for example, by the existence of a pair of different quantum states of elementary particles, in which these particles are capable of mutually reacting and transforming into a pair of photons. These states are very, very rare, so they are rarely observed, but they are possible.

Excess of electrons.

Antiparticles carry a similar, but opposite in value charge, like their prototypes from ordinary matter, but have the same mass and are similar to them in all other respects. But scientists could not wait to generalize the picture.

And of course, scientists immediately assumed that in the universe there can be whole galaxies of antimatter. This assumption was picked up by the science fiction writers and, in general, the fiction about antimatter, gained universal recognition.

True, this equality of the quantities of matter and antimatter was not confirmed and caused scientists a strong headache and various fictions.

It was also suggested that antimatter in the universe may be even more than ordinary matter. Just to see the antimatter is impossible, as well as the objects of the ordinary world around us. It is not visible to the human eye. However, reflection shows that the interaction of antimatter with photons is exactly the same as ordinary matter. Therefore, you can see it. It's just nowhere to be found.

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Absence of antimatter in the interstellar medium.

In the presence of stars from antimatter, various mechanisms of mass loss by stars

would lead to the appearance of antimatter in the interstellar medium and its annihilation with interstellar gas. The absence of intense gamma radiation, which should be observed in such annihilation, imposes a strict limitation on the concentration of antimatter in galaxies (less than 10^{-15} of the concentration of matter) and in clusters of galaxies (less than 10^{-6} of the concentration of matter), i.e., observational data of gamma-ray astronomy indicate the absence of a significant amount of antimatter in the outer space surrounding us, up to the nearest galaxy cluster. The need to explain the absence of strong mixing of matter and antimatter in cosmic scales, smaller clusters of galaxies, is an essential difficulty of cosmological models suggesting an equal amount of matter and antimatter in the universe.

Antimatter and the "Big Bang".

Further, it was necessary to draw the theory of antimatter behind the ears to the theory of the "Big Bang". To observe the rule of unity of all theories. And also, as one Internet user joked, on the association with the yahve-like texts (the Bible, the Talmud, the Koran, the ZoAr, and so on ...). For example, it is obvious that the Big Bang hypothesis is nothing more than an association to the creation of the world of Yahweh.

In this case, it was necessary to dock with the Big Bang and an excess of electrons above the positrons. Therefore, it was accepted that in the first instants after the Big Bang the number of positrons and electrons in the universe was still approximately the same. However, since such an identity is not observed now, it was decided that during cooling this symmetry was violated. In order to explain these violations, various deceptions appear regularly in the press. Here is one property found in some particles, then another, then the third, which could lead to a violation. And each time they forget that exactly the same property must also exist in antiparticles.

The process of violation of the equality of the quantities of electrons and positrons is described approximately in such words, which are by no means provable, but very naive. Say, while the temperature of the Universe did not drop to 1 MeV, thermal photons constantly maintained in the substance a certain concentration of positrons by the creation of electron-positron pairs (such conditions exist even now in the bowels of hot stars). However, after the cooling of the matter of the universe below the threshold of pair production, positrons somehow became annihilated with an excess of electrons. Where did the excess come from - it's not clear.

The birth of pairs

The birth of pairs - in the physics of elementary particles the reverse annihilation process, in which pairs of particle-antiparticle arise. For the appearance of a real pair of particles, the energy conservation law requires that the energy expended in this process exceeds twice the particle mass: $E_p=2mc^2$. Minimum energy E_p, necessary for the birth of a pair of a given type, is called the threshold of pair production. In addition, for the birth of a real pair, it is necessary to fulfill other conservation laws applicable to this process.

The creation of electron-positron pairs in the interaction of a gamma quantum with the electromagnetic field of a nucleus (in effect, with a virtual photon) is the predominant process of energy loss of gamma quanta in matter at energies above 3 MeV (at lower energies, mainly Compton scattering and photoelectric effect, at energies lower than $E_p=2m_ec^2$=1,022 MeV, there is no pair production at all). The probability of pair production in such a process is proportional to the square of the nuclear charge.

Electron-positron pairs by gamma quanta (in a cloud chamber placed in a magnetic field to separate the electron and positron tracks) was first observed by Irene and

Frederic Joliot-Curie in 1933, and Patrick Blackett, received in 1948 for this and other discoveries Nobel Prize in physics.

A strong electric field can generate electron-positron pairs. The intensity of the generation of electron-positron pair depends on the field strength and not on its frequency. For the effect to be noticeable, very large field intensities are required $E_{kp} \approx 10^{16}$ В/см. The field strength in the Bohr orbit of the hydrogen atom $E_{at} \approx 10^{9}$ В/см.

In high-power laser pulses, it is possible to obtain electromagnetic fields of relativistic stresses. At present, it is possible to obtain a power flux of up to 1022 W / cm2 with a pulse duration on the order of several femtoseconds (1 fs = 10^{-15} s). In such fields with the help of lenses it is possible to create electric field strengths close to E_{kp}. Thus, a direct experimental verification of the effect of the vacuum production of electron-positron pairs is possible.

Annihilation and the birth of pairs in the Theory of the Elastic Universe.

In the model of the elastic universe, all elementary particles are wave vortices created with the participation of the law of winding. Photons are also wave objects, but not vortex, but freely flying in space. And photons and particles are described by mathematical formulas, which are solutions of the wave equation:

The uniform formula of all Matter, of all Particles, of all Fields and all Quantums of our Universe:

$$\frac{\partial^2 \mathbf{W}}{\partial t^2} - c^2 \Delta \mathbf{W} = 0;$$

$\overline{\mathbf{W}}$ - displacement vector of elastic space

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Photons are described by solutions of the type:

The displacement formula for objects moving with speed of light (photons, neutrinos, etc.):

$$W_i(r,\theta,\varphi,t)=\frac{C^{i}_{j,m}}{\sqrt{r}}\bullet J_{j+\frac{1}{2}}(kr\pm\omega t)\bullet Y_{j,m}(\theta,\varphi)$$

k - Wave number. i=1,2,3 (cartesian); j,m - 0,1,2,...;

$C_{j,m}$ - Arbitrary; $\omega=c\bullet k$; c - Speed of light.

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Particles are described by solutions of the type:

Solenoidal solutions. In such a wave All energy moves around the axis. This The class of solutions defines elementary particles: a proton, a neutron, an electron, mesons, etc.

$$W(r,\theta,\varphi,t)=\frac{C_j}{\sqrt{r}}\bullet J_{j+\frac{1}{2}}(kr)\bullet P^{m}_{j}(\cos\theta)\bullet \sin(m\varphi-\omega t)$$

k - Wave number. i=1,2,3 (cartesian);

j,m - integer; C_j - Arbitrary;

$\omega=c\bullet k$; c - Speed of light.

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There are also other solutions of the wave equation.

The universe is an infinite, elastic continuum in which all possible wave objects exist that move, and mutually transform, which are solutions of the wave equation.

Is the field of an electron spherically symmetric?

True, it is rather strange that, having strong evidence of the presence of spin and magnetic moment of the electron, obvious signs pointing to the axial symmetry of the particle, its length and its rotation, no one seriously considered the structure of the electron. Apparently, the main reason was originally that there were no technical possibilities for studying the structure of elementary particles. In addition, a purely mechanical model of the electron gave values of the speed of rotation on the surface of an electron in the region of the velocity of light, which at that time did not receive an explanation.

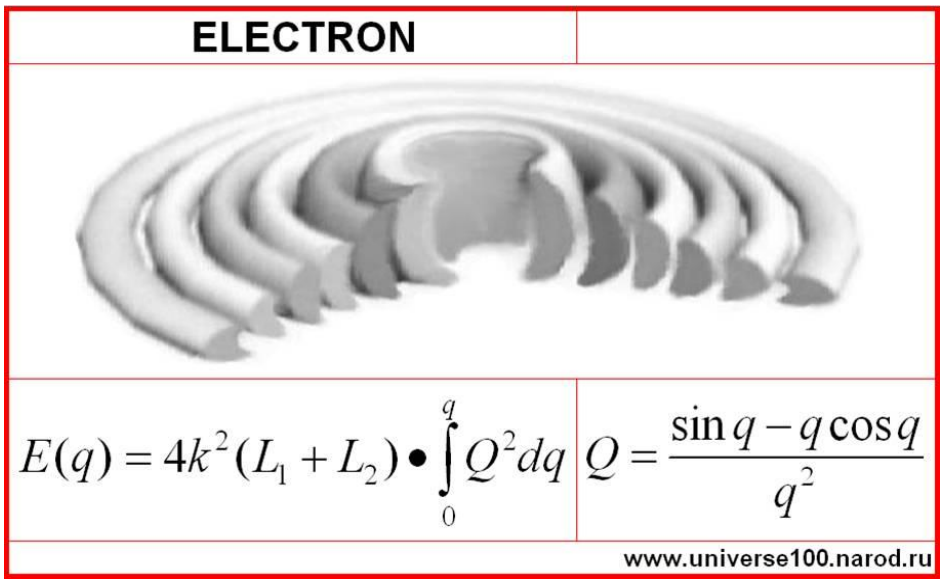
Thus, from the 20s to the 30s of the last century, it was historically established that the electron is point and structureless. And all its properties, charge, mass, spin, etc. - this is some magical, internal and inexplicable properties.

And everyone knows that breaking dogmas is not a thankful task. Even punishable.

What does the macroscopic field of an electron look like?

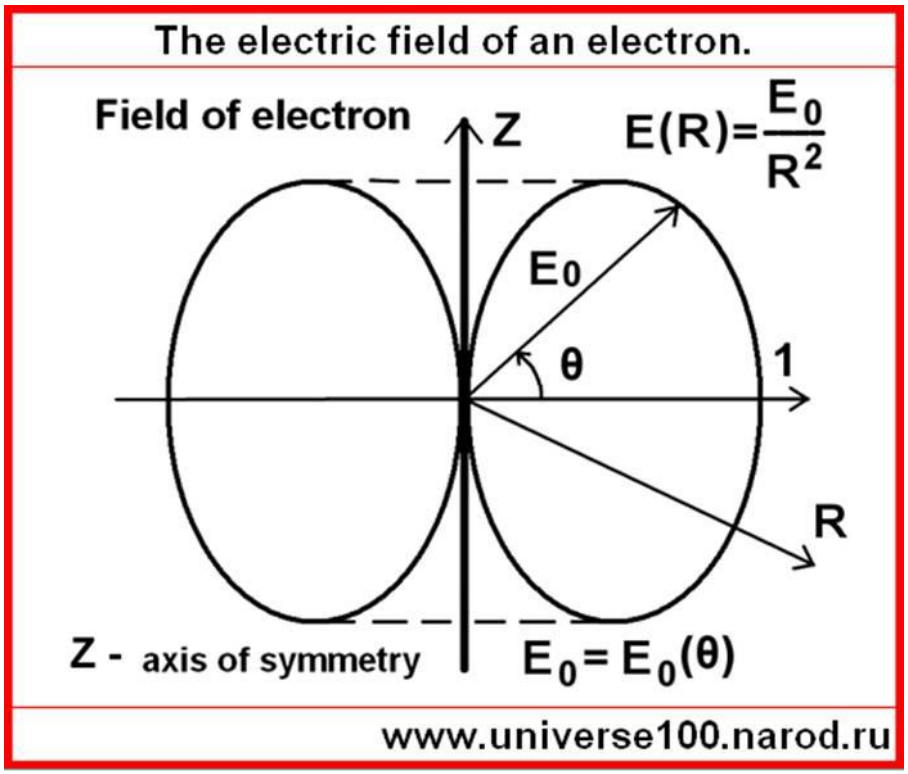
We have established that the electron is axisymmetric, but does not have spherical symmetry. The neutron possesses the same properties. The proton does not even have axial symmetry. It is more difficult to analyze a neutron, because its electric charge is zero and the external fields practically do not affect the trajectory of its motion. Therefore, such a powerful research resource as the trajectory of a particle in an external electric or magnetic field to a neutron turns out to be completely inapplicable. Next, we consider an electron.

Let us try to analyze the distribution in the space of the electric field of the electron. We already have an electron pattern and a density distribution inside it.



(43-1)

We have a fairly reliable hypothesis of the electric field distribution around the electron. Let (R,θ,φ) be spherical coordinates. The distribution of the macroscopic electric field does not depend on the angle φ and has the following form in the (R,θ) coordinates:



(43-2)

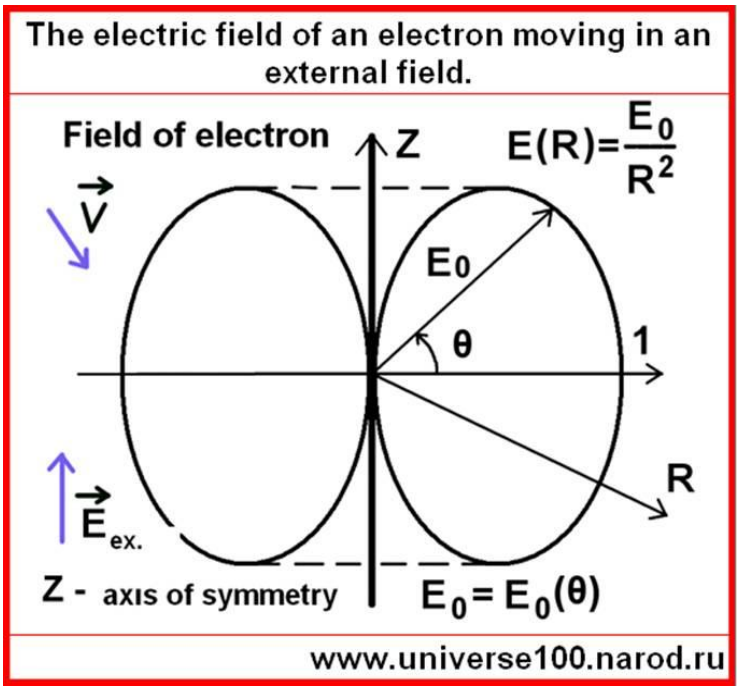
That is, according to the sign, the field (as generally accepted) is negative. And in absolute value varies depending on the angle θ. At $\theta=0^0$ or 180^0, the field is assumed to vanish.

In terms of microscopic this field of an electron breaks up into a huge number of thin wave spherical layers. From layer to layer, the field changes. And within each layer the field is not uniform. Investigation of the electric field of an electron at the micro level is a separate task, here we do not touch this.

How does an electron behave in an external field?

How does a moving electron behave in an external electric or magnetic field? Because of its spherical asymmetry, the electron, in its motion, will always acquire a certain, quite specific orientation with respect to the external field. Namely, such that its potential energy is minimal. Or in other words, when the external force acting on it is minimal. This is the principle of mechanics.

Consider the same figure of the electron, but now moving at a speed V (see the figure below) in the external field of E_{ex}. (arrows on the left, in blue). Suppose that the optimal orientation of the electron is achieved precisely when the electron is oriented along the Z axis. In this case, the direction of the velocity of its motion relative to the vector of E_{ex}. can be very different.



(43-3)

Obviously, this is precisely the same orientation that the electron acquires in all experiments with an external electric field. A similar picture will also be observed when an electron moves in an external magnetic field. With the difference that you need to take into account the other direction of the magnetic field.

It is also evident that it was at this, and only at this, and always at this orientation, that the electron charge was measured and that Coulomb's law was verified.

But is another orientation of a freely moving electron in an external field possible? How to keep it in a different orientation? String on the needle as an apple and then turn? Unfortunately, such a focus is practically not feasible. And the electron as it was until now, will remain forever. And its charge, and its orientation, and Coulomb's law.

However, there is still an assumption. If the electron is steadily oriented in position as in the picture, then it has one more, though not very stable, equilibrium position. Namely - with the opposite orientation. Yes, what is there to invent, if according to the quantum theory, the electron simply has two projections of the spin on an external electric or magnetic field. In this opposite orientation, the electron can not appear in our experiment, because it is impeded by the thermal motion of the surrounding particles. But he may find himself in this unstable state if he flew from a distant cosmos. And it is quite possible that the configuration of all fields (including the field of the electron itself) is such that in some very small region of solid angle, the electron of opposite orientation possesses stability of this orientation. Moreover, since all the surrounding processes are macroscopic, nothing can extract an electron from such a locally stable position. In addition to some energy collisions with other particles. So he flies from a distant cosmos, with the opposite orientation, and nothing can take him out of this orientation, because all the fields around change smoothly, gradually, without jumps.

It is fairly obvious that the external magnetic field begins to act on the oppositely oriented electron in the opposite direction. And then how does an electron, with such an opposite orientation, start behaving when moving? He behaves like an oppositely charged electron. That is, as a positron.

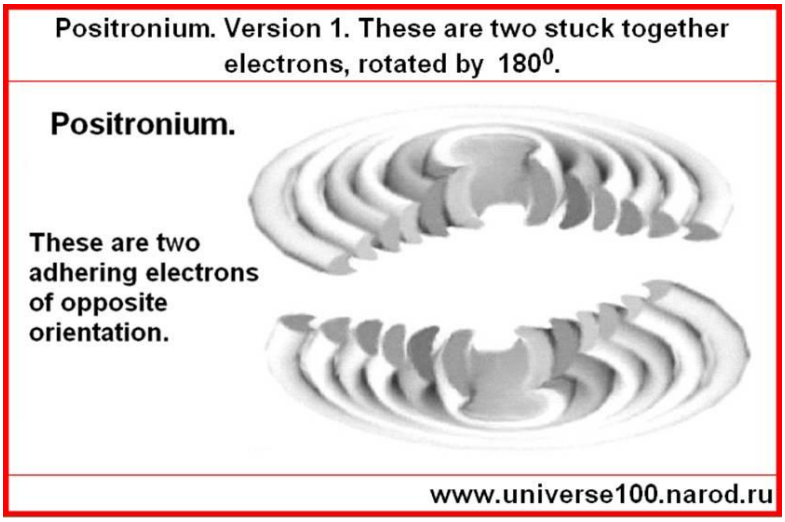
True, it is not clear, but how such an oppositely oriented electron, the positron, will behave in the electric field? And were there such experiments?

Two of our versions of the phenomenon of antimatter.

Version 1. Positrons are electrons rotated by 180^0.

However, on this surprise with the oppositely oriented electron do not end. In the collision at low velocities of the motion of an electron with an oppositely oriented electron, their composite is possible, which is discovered in experiments and is called positronium. Positronium is a clutch of two electrons when they are turned, as if facing each other.

However, in conductors, it is more preferable, especially when applying an external electric voltage, when the electrons are aligned in a chain, like soldiers in a column, one after another. With such a system, not one or two (as in positronium) can be lined up in a column, but any number of electrons. In this case, if there is a small attractive force in positronium, then in the chain of electrons in the conductor there is a small repulsive force.



(43-4)

This is the first version of the explanation of the phenomenon of antimatter and all related paradoxes.

Version 2. Positrons = excited free electrons with increased spin.

It is generally accepted that elementary particles do not have energy levels in the free state. But we are going along unprotected routes. This version has already been considered by us in the chapter on the angular momentum of loks or elementary particles.

The possibility of spin levels for a free electron.

Let us consider a free electron. An investigation of the mechanical properties of a free electron as a wave object reveals an interesting possibility. Namely. The possibility (in principle) to increase the diameter of rotation of the constituent layers, without changing the total energy of all layers, that is, the entire wave object. That is, if we give the electron an additional torque of rotation, then in principle it can be so, all this torque will go to increase the size of the electron, but its mass will remain unchanged.

Let's see how it looks mathematically.

As is known, the moment of rotation of a physical body has discrete levels M_l. l = 1,2, ... For each such value of l, there exist (2l+1) solutions of the Schrödinger equation, which are spherical functions. The eigenvalues of the squared angular momentum operator are:

$$M_l^2 = \hbar^2 l(l+1)$$

(43-5)

l = 1, 2, …

That is, from the Schrödinger equation (which, as we know, is equivalent to the wave equation) necessarily follows the discreteness of the square of the angular momentum of the object, regardless of the appearance of this object. In particular, these objects can be loks.

Further

The moment of the pulse expressed through the moment of inertia and the angular velocity of rotation.

$$M = I \bullet \omega = (k \bullet m) \bullet \frac{2\pi R}{c}$$

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(43-6)

k is some coefficient that takes into account the shape of the body. Not to be confused with the previously used designation of the wavenumber. We assume that the value of k varies little with changing l. That is, k_l=k=const. That is, the shape of an electron under such spin excitation changes little. How is it that in reality is difficult to say for the time being. But here is set out a certain general view, which reflects the essence of what is happening. In reality, the shape may change slightly, the size may change slightly, the density may change slightly. So that in sum the energy (mass) of the electron does not change under spin excitation.

Then there is a constant in parenthesis and it becomes obvious that to execute the original formula it is sufficient that R(l) also change as M_l. I.e:

$$R(l) = R_0 \cdot l \cdot (l+1)$$

(43-7)

Where R_0 is the Compton radius of an electron:

$$R_0 = \frac{\hbar}{2\pi m_e c}$$

How do the values of $R(l)$ for the first two values $l=1$ and $l=2$ correspond, for example? It is easy to calculate that this ratio is equal to 2(2+1)/1(1+1)=3. That is, roughly, the first excited state (by the moment of the pulse) of the electron has a moment of inertia 3 times greater than that of the unexcited electron. But since at the moment of inertia the size enters the square, the linear size of the "excited" electron is about 1.7 times larger than that of the ordinary electron.

Again, here, at first glance, there is a contradiction with the generally accepted opinion that elementary particles do not have energy levels in the free state. But we are following unprotected routes, which refute many dogmas.

A free electron, according to the conventional wisdom, can not absorb a photon, since in this case the laws of conservation of energy E and momentum p can not be observed at the same time. For example, for the optical transition of a free electron from the state E_1,p_1 to the state E_2,p_2 in the absence of the third body (condensed matter, atom or scattered photon), the conservation of energy and momentum $E_1-E_2=\hbar\omega;$ $p_2-p_1=\hbar\omega/c$ are incompatible for any electron velocity $u<c$.

And with this, they all sort of resigned themselves. But we forget that all these statements are correct under the assumption that the electron is pointlike. And if not? If it is a very complicated localized wave vortex at all? If he can change the size, shape? And what if the third particle is in the right place at the right time?

Suppose that with the help of a third particle, an electron will absorb a photon.

For example, such a process. The third particle interacts temporarily in a triple collision, but at the same time it takes the photon energy itself, and it transmits some torque. As if beats casually, on a tangent. And in principle, with triple collisions, an increase in the angular momentum is possible without increasing the electron energy.

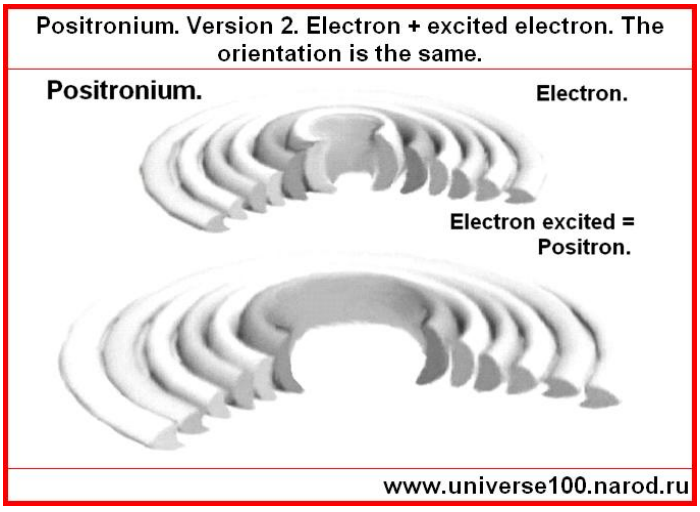
Electron is a wave localized formation. Consisting in the normal state from the system of wave rings. Suppose that an electron has obtained a minimum possible quantum of the angular momentum without changing the total energy. What kind of an electron will be acquired after this? It converts the electronic layers in such a way that the internal "hole" is somewhat expanded and all the layers are shifted somewhat. Here's what a "free-excited" electron becomes:

(43-9)

If we recall that the spin of an electron, and with it the charge of an electron, is the result of the rotation of the depicted wave rings (and the neighboring rings rotate in different directions), then it is easy to see that both the spin and charge of the "free-excited" electron change the sign to the opposite. Which will correspond, ostensibly, to the positron. In fact, it's just a "free-excited" electron. And nothing more. However, since experiments comparing the orientations of the electron and positron spins have not been carried out, then we have no right to deny this possibility.
- Yes, a "free-excited" electron will annihilate with a normal electron, because their wave rings are displaced and, when applied, it may turn out that they rotate in opposite directions.
- Yes, this "rotationally-excited" state of the electron is very rare in nature and difficult to obtain in experiments. And the fact that we draw in the figures, the production of electrons and positrons when passing gamma quanta through a lead plate, does not correspond to reality. Because the beam of the resulting electrons is a thousand times thicker than the beam of resulting positrons.
- And for this very reason, supposedly positrons in space are extremely small. In general, antimatter in space is not enough for the reason described here. And do not invent anything, all sorts of standard models and so on. This is a delusion of world physics.

Positronium. Version 2.

For clarity, an electron is shown on top and an excited electron - that is, a positron - from below.



(43-10)

That is, when a free electron is excited, which according to traditional physics can not be excited, but in fact can, a positron is produced. With a soft rapprochement between them (and with the appropriate orientation), their connection is formed, which is always called positronium. With a rigid approach, their turns, which are shifted along the radial coordinate, mutually annihilate and form two photons.

Why is antimatter in the universe so small.

The reason is simple. Antimatter is a rare (quantum) state of ordinary matter. Therefore, the percentage of positrons in cosmic radiation is very small.

The essence of annihilation.

- Annihilation is a process of merging a particle + the same particle, oriented towards, or excited. When all the turns of localized wave formations straighten out at once, they turn into directly flying photons. Naturally, in different directions.

The existence of annihilation signifies the possibility of an inverse process, the fusion of two photons in a collision, and the formation of a pair of two elementary particles in different quantum states. In further collisions with surrounding particles, the particles obtained lose the opportunity for reverse annihilation. That is, it can be argued that globally in the universe, thus, an equilibrium is achieved between the amounts of photons and elementary particles.

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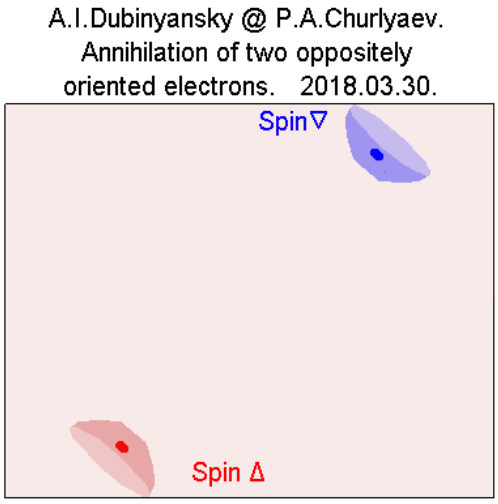

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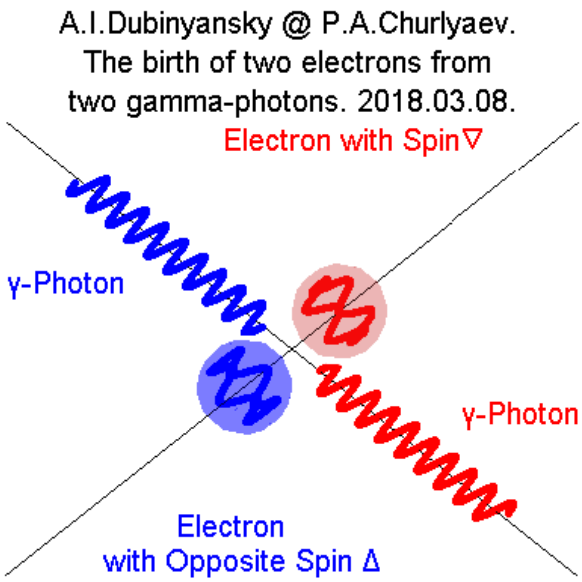

Physically, the process of annihilation of two oppositely twirled electrons is very simple. Swirling waves in the interaction simply straighten out and turn into two departing photons.

Is the mathematical description of the positron possible?

It is possible that we have not received all the basic solutions of the wave equation leading to an electron. It is possible that there is another solution that gives another form of an electron, but exactly the same energy of the new object that is integral in space.

- How can this new object look? It must have the same spin, ½ħ, like the electron. It must have the opposite charge. As we have previously established, the charge distribution correlates with the spin distribution. As can be seen from the graph of the spin density distribution in an electron, the spin sign determines the first wave of an electron. As it goes right down, so the spin becomes negative and the charge of the electron becomes negative.

It is not excluded that the excited state of an electron is described by some solution from the spectrum of general solutions.

As we know, the basic solution of the wave equation, the solenoidal solution that gives all the elementary particles has the form:

Solenoidal solutions. In such a wave all energy moves around the axis.
This class of solutions defines elementary particles:
a proton, a neutron, an electron, mesons, etc.

$$W(r,\theta,\varphi,t)=\frac{C_j}{\sqrt{r}}\bullet J_{j+\frac{1}{2}}(kr)\bullet P_j^m(\cos\theta)\bullet \bullet\sin(m\varphi-\omega t)$$

k - Wave number. i=1,2,3 (cartesian); j,m - integer;
C_j - Arbitrary; $\omega=c\bullet k$; c - Speed of light.

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(5-12)

However, if we return to the sequence of obtaining this decision and the portrait, it becomes obvious that this decision, although it is allotted, is important, but not the only one. The solution (5-12) can contain arbitrary constants, linear functions of the spherical coordinates (R,t,θ,φ). And also new special solutions of the wave equation that are not included in formula (5-12) are possible.

What will physically mean all significant or not significant changes in the main decision (5-12)? And physically this can mean that the shape of the electron, determined by the new solution, may differ from the original, basic form.

Our opinion.

There is no "antimatter" in the current generally accepted understanding. Too hurried with the title and too soon told reporters. And they fanned.

Entangled particles. Rave of theorists.

This legend arose from the observation of photons. Allegedly, pairs of photons are formed that are "linked". And regardless of the distance between them, everything that happens with one photon is instantaneously transmitted to another photon.

The cause of this legend is completely transparent.

- First, physics is full of legends and fables. The active participation of the church in the life of society contributes to this.
- Secondly, it is the pair appearance and exactly the same photons that gives rise to a riddle inexplicable in the framework of traditional physics. That is, the effect of "cohesion" at birth is obvious.
- After that, it remains only to slightly embellish the situation and introduce an extension of this coupling for the rest of the life of photons. And throw them to the journalists.
- Well, the most zealous dreamers expand the already fictitious "cohesion" of photons and other particles. It turns out just scientific "novels." Who will pervert whom.

The paradox of Einstein-Podolsky-Rosen (EPR paradox) is an attempt to point out the incompleteness of quantum mechanics with the help of a mental experiment that involves indirectly measuring the parameters of a microobject without directly affecting this object. The goal of such an indirect measurement is to try to extract more information about the state of a microobject, than to give a quantum-mechanical description of its state.

According to the Heisenberg uncertainty relation, it is impossible to simultaneously measure the particle's coordinate and its momentum. The reason for the uncertainty is

that the measurement of one magnitude introduces essentially unavoidable disturbances into the state and values of another quantity. However, we propose a hypothetical method by which the uncertainty relation can be circumvented.

Suppose two identical particles A and B were formed as a result of the decay of the third particle C. In this case, according to the law of conservation of momentum, their total momentum p_A+p_B should be equal to the initial momentum of the third particle p_C. This makes it possible to measure the momentum of one particle (A) and calculate the momentum of the second (B) by the law of conservation of momentum $p_B=p_C-p_A$, without introducing any perturbations into its motion. Now, by measuring the coordinate of the second particle (exactly), it is possible to obtain for this particle the values of two immeasurable quantities simultaneously, which is impossible by the uncertainty principle. Thus, the uncertainty relation is not absolute, and the laws of quantum mechanics should be somehow refined.

If the laws of quantum mechanics are not violated in a given experiment, measuring the momentum of one particle is equivalent to measuring the momentum of the second particle. What creates the impression of instantaneous action of the first particle on the second in contradiction with the principle of causality.

Einstein insisted on the preservation in quantum physics of the principles of determinism of classical physics and on the interpretation of measurement results from the point of view of an "unconnected observer" (English detached observer). On the other hand, Bohr insisted on the nondeterministic (statistical) nature of quantum phenomena and the unavoidable effect of measurement on the state itself. As the quintessence of these disputes, Einstein's dialogue with Bohr is often cited. Bohr: "God does not play dice." - Einstein: "Do not tell God what to do." And also Einstein's sarcastic question: "Do you really think that the Moon exists only when you look at it?"

Schrödinger considered particles to be confusing, only while they physically interacted with each other. When removing beyond the bounds of possible interactions, entanglement disappeared. That is, the meaning of the term in Schrodinger differs from that implied at the present time.

Our opinion. Now, on a new look at quantum physics, we understand how far these disputes of the "coryphaeuses of physics" are far from reality. Entanglement does not exist.

How the universe was created.

Why are protons and electrons in the universe the same?

In nature, there are processes of particle annihilation. Consequently, there is a likelihood of inverse processes, especially in the light of Gukuum theory. That is, a collision at one point of a pair - three of some wave objects or other wave processes can give birth ... What? The following arguments make sense.

As a result of double-triple interactions of waves or other processes, twisted waves appear that, according to the law of winding, form localized objects. The properties of Gukuum and mathematical formulas miraculously are such that it is the pair - a heavy small center and a light surrounding cloud - that are best able to absorb any extended swirling wave. Because it is not easy, because the laws of the wave equation are discrete laws. The proton is formed small and heavy - these are the laws of mathematics. He captures a huge mass, but having a small size can not have a big spin. This spin remains in the light surrounding cloud. But again, miraculously from this cloud an electron is formed, which has a huge (relative to its mass) spin and great freedom over energy levels. This allows us to settle all the equalities of energy,

momentum, and all this in a discrete expression when the hydrogen atom is formed. Due to the properties of Gukuum, all infinitely long ago, the originally formed objects were identical and they were hydrogen atoms. Their more dense relatives - neutrons were most likely formed later, in nuclear reactions. The only way. Here is the answer to question №1. The confirmation is that until now hydrogen is 90% of the total mass of the universe. All the other elements arose in the nuclear furnace of stars.

More later. We have mentioned just above that all electromagnetic formations, including photons and even radio waves, have a localized nature. This circumstance strengthens the reasoning. Because even the collision of two radio waves is a collision of localized objects.

Here's another question. The masses of an electron, a proton and other particles - why exactly these? At the beginning of the article, there was already a response about the particle size. Everything is determined by the mechanical parameters of the gukuum and its Majesty Mathematics. Here is the same answer.

Loks with large (j,m) are also allowed. And they need research for existence in reality.

But is not ball lightning converted at its final collapse into several million hydrogen atoms ?! This just simulates the formation of the universe, matter. The unstable ball lightning turns into stable hydrogen atoms. Hence the explosion, cotton - an increase in volume.

Conclusions.

The study of localized solutions of the wave equation opens up an abyss equal to the universe. All that exists in the universe exists in the theory of loks. The converse is also true. Now an electron, a neutron and a proton are practically identified. There were no obvious contradictions with the experimental and generally accepted formulas. All orders of magnitude converge, and in most cases the quantities themselves. The phenomena previously unclear were received. New relationships between world constants have been obtained.

The final victory will be achieved when the charge of elementary particles is theoretically determined and identified. While this is a riddle - something like a spin, absolutely identical for a proton and an electron and exactly equal to zero for a neutron. Other elementary particles also need identification: mesons, etc. The results achieved will be the basis of axiomatic physics. This is no longer a dream, but a harsh reality.

Опубликовано:
https://www.academia.edu/34651096/Antimatter_that_does_not_exist._Hasty_name_and_recognition

http://vixra.org/abs/1802.0082

Аннигиляция: https://www.academia.edu/36129089/GIF_-_annihilation_and_creation_of_a_pair_of_elementary_particles

Обсуждение: https://www.academia.edu/36128910/GIF_-_annihilation_and_creation_of_a_pair_of_elementary_particles

http://vixra.org/abs/1803.0147

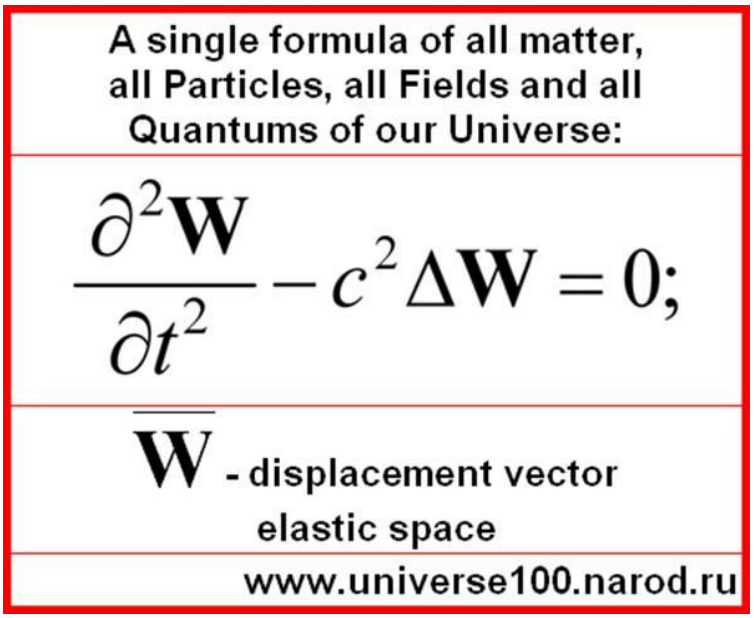
18. The emergence of quantum mechanics in a gukuum. Part 1.

Abstract. The identity of the wave equation and the quantum Schrödinger equation is shown. The exact physical meaning of the Heisenberg uncertainty principle is obtained. The exact physical meaning of the diffraction phenomenon is obtained. The exact physical meaning of Planck's formula for the quantum energy is obtained. An estimate of the dimensions of the lok is made and its closeness to the Compton size of the elementary particle is established.

Identity of the Schrödinger equation with wave equation.

In the first part of the undertaken description of the universe, the main thesis was formulated: The universe is homogeneous and elastic. All that is in the universe are different kinds of vibrations of the universal Gukuum. The elastic universe continuum is called a gukuum. The whole universe is the Infinite Homogeneous Gukuum.

This model is not obvious and not natural for perception. But she, like no other, absolutely blended into all the known existing theories and simultaneously combined them. So. All objects in the universe are described by the wave equation:



(2-1)

$\mathbf{W}$ is the displacement vector of the element of the elastic universal Gukuum.

Definition. We shall call the lok a localized vortex wave object, the stress field in Gukuum. According to our theory of Gukuum, any elementary particles are uniquely defined as Loks - localized wave objects - stress fields in Gukuum.

It is interesting that the element of mass in the theory of Gukuum is the element of stress in the Gukuum that moves at the speed of light. Where and mc^2.

Now there is no need for duality, dualism. Material particles are understood not as "point", without an internal device, but as real spatial objects, with an internal device. Particles are not perceived as "particles exhibiting some wave properties," but as real wave objects. Even the particles actually do not exist at all, and there are only Baki. The particles are not imagined as "smeared" in quotation marks, that is, in the sense of Ψ-functions, but as really smeared and also rotating with the linear velocity of the element equal to the light one.

Despite the fact that the main clot of these loks is localized in a small volume, the peripheral part of them is smeared quite far in space, albeit with a rapid decrease in density. From this, the phenomenon of diffraction of a beam of elementary particles, interference and many other phenomena turn out to be quite expected. All (!) Phenomena and paradoxes from microphysics receive a simple explanation.

Example: diffraction. Ambiguously folds for the lok span through the slot. Can slip well, straight. And can be hooked at the bar and drove into the side ... Depending on many conditions, there is a different diffraction pattern. In any case, this process becomes understandable without the involvement of psi-factors.

We will set as our goal the gradual revision of all the provisions of modern physics. Water stone hollow. Someday the quantity will go into quality, the iceberg will melt away and turn over.

The physical picture is always multifaceted. And that there were no distortions when it is displayed, it is necessary to establish the ratio of all its elements according to the principle "everyone with each." As in the standings. It takes time.

Quantum mechanics arises extremely easily, clearly, naturally and inevitably from the wave equation in Gukuum. No assumptions and strains are needed. Even no experiments are needed - everything has already been tested. Postulate Gukuum and deduce the theory of the whole universe. The theory of Gukuum is none other than the Axiomatic Physics, the necessity of which has been spoken for so long during the Bolsheviks.

It is even surprising how simple the words are to be made, so that the cause of the discreteness of the universe becomes understandable, the cause of quantum mechanics.

There are many solutions to the wave equation, but they can be conditionally divided into groups that exist in the Gukuum themselves, interact and exchange energy only within the group, and do not affect the other groups in any way. One such group is a group of discrete solutions, in which several integer parameters appear. This is our universe. Regarding the fate of the other groups of decisions, we are not very tense.

The discrete solutions obtained from the wave equation largely coincide with the solutions obtained from the Schrödinger equation. A complete analytical analysis of all quantum mechanics on the theory of Gukuum will require a long effort. This is work for whole institutions. This is a reworking of all textbooks.

Principle of uncertainty

The existing quantum physics seems to offer more equations than the parameters of the object under study. Hence the impossibility of simultaneous measurement of some pairs of quantities, hence the principle of uncertainty.

According to Gukuum theory, the uncertainty principle arises somewhat differently. Banks do not have a strictly defined form. They have nothing stable at all. These objects are vibrational - rotational, with an internal transformation of energy between kinetic and potential. Also with frequent, directly-machine-gun, exchanges of thermal and light quanta with surrounding particles. Any measurement above the lok affects its state. Example: passing an object through a slot. This experiment - fixing the width of the object. It is similar to the processes that we observe in everyday life when pushing something rounded into a slot, for example a ball between the goalkeeper's legs or swallowing a piece of cake. At the moment the object slips through the slot, it first moves with difficulty, contracts laterally, and stress is required to push it through the slot. Then, after passing through the narrow part, it is again unclenched and accelerated. As a result, it is at the moment of measuring the width of the object that there is an uncertainty in its momentum. This uncertainty sometimes ends sadly. Or an unexpected goal "in the point" goalkeeper or vice versa, stuck in the throat or esophagus piece of cake (or worse - in the evening constipation). And few people suspect that the principle that was discovered by Heisenberg is to blame.

Analogous results also appear in the measurement of other parameters in loks. For example, in an energy measurement experiment, the longer the measurement time, the better the measured energy is averaged, its scatter is smaller and its mean value is measured more accurately. Conversely, the shorter the measurement time, the more uncertain the energy data, because it jumps back and forth from the kinetic to the potential, from one "petal" object to another, not to mention the exchange of energy with other particles.

In any experiment to measure a parameter, the lok is fixed by the same parameter and is limited. As a result, some other parameter is changed. This is an ancient law, coming from Lomonosov.

Conclusions. A clear (not formal-mathematical) explanation of the Heisenberg uncertainty principle, which has no such explanation in quantum mechanics, is a small first signal in favor of the theory of Gukuum.

The Schrodinger equation.

It is quite obvious that the Schrodinger equation and the wave equation in the elastic body are similar in relation to the theory of Gukuum.

According to the textbook, we have the Schrodinger equation for a moving particle:

The Schrödinger equation of the particle μ:

$$i\hbar\frac{\partial\Psi}{\partial t}=-\frac{\hbar^2}{2\mu}\Delta\Psi$$

$\Psi(x,y,z)$ - wave function of the object.

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(2-2)

Here $\Psi=\Psi(x,y,z)$ is the wave function of the object. The square of this function, in traditional transcription, has the physical meaning of the probability density of finding a "particle" in an element of space. What kind of "particle" will it be discussed below. Further, ħ is the Planck constant, μ is the rest mass of the particle.

Note. For uniformity, the "crossed" Planck constant and all the formulas and quantities associated with it are taken everywhere.

The Schrodinger equation is transformed into the wave equation and vice versa:

Transformation of the wave equation into the Schrödinger equation and back

Schrödinger equation:	The one-dimensional wave equation:
$$i\hbar\frac{\partial\Psi}{\partial t}=-\frac{\hbar^2}{2\mu}\Delta\Psi$$	$$\frac{\partial^2 W_i}{\partial t^2}-c^2\Delta W_i=0;$$
We make the substitution: $$\Psi=Ue^{-i\frac{E}{\hbar}t}$$ $$U=U(x,t)$$	**We make the substitution:** $$W_x=\lambda Ue^{-i\omega t}$$ $$\lambda\bullet\omega=2\pi c;\ U=U(x,t)$$
$$\Delta U+\frac{2\mu}{\hbar^2}EU=0$$	$$\Delta U+\frac{\omega^2}{c^2}U=0$$

Equate the left and right equations,
we obtain the basic equation for the lok energy:

$$\frac{2\mu c^2 E}{\hbar^2}=\omega^2 \qquad (1\text{-}8)$$

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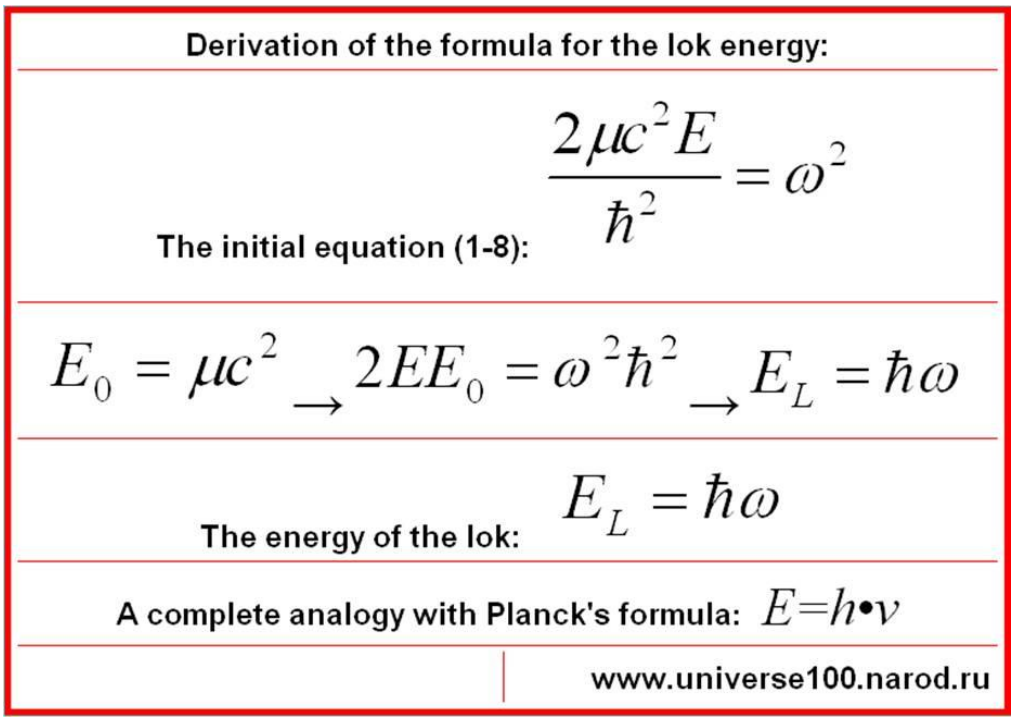
(2-8)

where W_x is the x-component of the displacement vector $\mathbf{W}$ of the elastic medium element. It is not difficult to see that the physical meaning of W_x is close to the physical meaning of the above-mentioned $\Psi(x,y,z)$. Namely, the square of the displacement of the element of Gukuum carries in itself the meaning of the element of the stress energy (Hooke's law), and consequently the element of the mass of the object. Consequently, the square of the displacement W_x also has the meaning of the probability of finding a particle of mass in an element of space. As will become evident from the following, this closeness is of the nature of complete coincidence.

The formula obtained below will serve to obtain two more interesting formulas. First we obtain a formula for the energy of the lok, analogous to Planck's formula:



Here, E_0 has the meaning of the total energy of the particle. For a lok, the value of E initially had the meaning of kinetic energy. But since this object is not pointlike, but complex, according to Lomonosov's law of equilibrium, it has the same amount of potential energy. The total energy of the lok is $E_L = 2E$. And it is equal to E_0.

The value of ω, as mentioned, has so far a certain supposed average meaning, because different parts of the lok, in principle, can rotate at different angular velocities. Below we will estimate this angular velocity of rotation.

If the obvious formal substitution is made in equation (2-8): $\omega=2\pi c/\lambda_K$, again to take into account the Kelvin formula and find this λ_K, we get the familiar expression:

Then, from the same basic formula, we obtain a formula analogous to the Compton wavelength:

Derivation of the formula for the lok wave size:

The initial equation (1-8): $$\frac{2\mu c^2 E}{\hbar^2} = \omega^2$$

Formal replacement: $\omega = 2\pi c/\lambda_K$,

take into account $E_0 = \mu c^2$ and find λ_K:

$$\lambda_K = \frac{2\pi\hbar}{\mu c}$$

The coincidence with the formula for Compton wavelength.

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It is not difficult to determine the Compton wavelength in this quantity and formula.

Conclusions. The above proof of the identity of the Schrödinger equation and the wave equation is unlikely to say anything new to mathematicians. However, it slightly lifts the veil over the mystery of the mathematical apparatus of quantum mechanics. It is of interest to physicists. And this is the second signal in favor of the theory of Gukuum.

On the sense of linearity of quantum operators.

Well, the offset in the Gukuum correlates with the wave function by 100%. But this does not mean that all the remaining quantum physics built on linear operators will also be well correlated with the wave equation. For example, how does the wave energy in Gukuum behave ?!

Having done all the necessary calculations, we conclude that:

$$\frac{\partial^2}{\partial t^2}(\Delta E) = c^2 \Delta\Delta E$$

(2-21)

What generally does not mean that the energy in the gukuum also satisfies the wave equation.

$$\frac{\partial^2 E}{\partial t^2} = c^2 \Delta E$$

(2-22)

However, for many problems this is the case. Here we need further analysis, which we are putting off for now.

If there is time, similar calculations will be done with all possible physical quantities (momentum, momentum, etc.) for the loks. So far, a reasonable assumption has been made that some of them satisfy the wave equation. In particular, the impulse.

Thus, the artificiality of the introduction of operators begins to be revealed, as is the Schrödinger equation and all of the current quantum physics. However, this is not a secret. The introduction of operators is dictated by their convenience, linearity, which, as we saw, stems from the wave equation. The introduction of operators is dictated by the complexity of the problem. What kind of task? And the only task of understanding reality - Gukuum. And this is the third signal in favor of the theory of Gukuum.

All relatively quantum physics, which affirms the absence of the chosen frame of reference, is built just on the chosen frame of reference: the count from the person, from his perception. We are firm, and there is emptiness around. An, it's not so and vice versa! There is no doubt that it was worthwhile to tell someone about 60 years ago about Gukuum, but to insist on it, so that physicists believe, then it would be "a matter of technique" to create a mathematical apparatus. The whole complexity of the unusual, and therefore Einstein rejected this version. Yes, the equations of propagation of electromagnetic waves, light are similar to the equations of sound waves in an elastic medium. "But what is this environment in which light is spreading and what are its mechanical properties?" While this question remains unanswered, there is no hope of reducing optical phenomena to mechanical ones, but the difficulties in solving this problem are so great that we must abandon this path , therefore, they must also abandon mechanistic views "(Einstein, citation, [2]). And all of his followers, like his predecessors, did not even try to give meaning to this idea.

Continuation of the chapter on the next page.

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Опубликовано:
https://www.academia.edu/34572741/The_emergence_of_quantum_mechanics_in_a_gukuum._Part_1

19. The emergence of quantum mechanics in a gukuum. Part 2.

Abstract. The energy levels of elementary particles are investigated. The common opinion that free elementary particles do not have energy levels is questioned. Simply, these levels are not yet detected. It is possible that these excited states are not stable.

The appearance of a discrete energy spectrum in loks.

Let us consider the quantization of the angular momentum of a "microparticle". In the conventional interpretation this quantization is quite abstract, has the character of formal mathematical operations. Nevertheless, this is a generally accepted theory that appears in all textbooks and has the status of an accurate reflection of objective reality. Visualization will only be quantized in gukuum theory.

The angular momentum is understood to be the vector product of the radius vector of the particle on its momentum: $\boldsymbol{M}=[\boldsymbol{rp}]$. In quantum mechanics, the operators of $\boldsymbol{M}$ and $\boldsymbol{p}$ are also multiplied in the same way:

$$\hat{M} = [\hat{r}\,\hat{p}] \qquad (2\text{-}23)$$

We are more interested in the operator of the square of the angular momentum.

$$\hat{M}^2 = -\hbar^2\{(z\frac{\partial}{\partial y} - y\frac{\partial}{\partial z})^2 + (x\frac{\partial}{\partial z} - z\frac{\partial}{\partial x})^2 + (y\frac{\partial}{\partial x} - x\frac{\partial}{\partial y})^2\} \qquad (2\text{-}24)$$

If we go over to spherical coordinates:

$$\boldsymbol{x = r\,sin\theta\,cos\varphi,\quad y = r\,sin\theta\,sin\varphi,\quad z = r\,cos\theta,} \qquad (2\text{-}25)$$

then for the angular momentum operator we obtain:

$$\hat{M}^2 = -\hbar^2 \Delta_{\theta,\varphi}$$

(2-26)

Where

$$\Delta_{\theta,\varphi} = \frac{1}{\sin\theta}\frac{\partial}{\partial\theta}\left(\sin\theta\frac{\partial}{\partial\theta}\right) + \frac{1}{\sin^2\theta}\frac{\partial^2}{\partial\varphi^2}$$

(2-27)

is the Laplace operator for a sphere. Similarly, the projections of the angular momentum operator are obtained depending only on the angular coordinates (θ,φ). The equation for determining the eigenvalues and eigenfunctions of the angular momentum operator of the angular momentum:

$$\hat{M}^2 \Psi = M^2 \Psi$$

(2-28)

or substituting (2-26) and (2-27) into (2-28), we obtain the equation:

$$\frac{1}{\sin\theta}\frac{\partial}{\partial\theta}\left(\sin\theta\frac{\partial\Psi}{\partial\theta}\right) + \frac{1}{\sin^2\theta}\frac{\partial^2\Psi}{\partial\varphi^2} + \frac{M^2}{\hbar^2}\Psi = 0$$

(2-29)

Further in classical quantum mechanics this conclusion follows. The requirement of finiteness, continuity, and uniqueness of the solution (2-29) yields a unique solution. It turns out that such solutions exist only when

$$\frac{M^2}{\hbar^2} = l(l+1)$$

(2-30)

where l is a positive integer. For each such value of l, there are ($2l$+1) solutions, which are spherical functions. The eigenvalues of the squared angular momentum operator are:

$$M_l^2 = \hbar^2 l(l+1)$$

(2-31)

l = 0, 1, 2, …

That is, from the Schrödinger equation (which, as we have shown, is equivalent to the wave equation) necessarily follows the discreteness of the square of the angular momentum of the object, regardless of the appearance of this object. In particular, these objects can be loks. Moreover, if we "solve the wave equation" in the forehead, we require "continuity and uniqueness" of the solution, then, after the separation of the variables, we inevitably arrive at equation (2-29). Only there will be a square of torque of rotation of lok M^2. And it will be quite rightly said about him that the values of the square of the angular momentum of the lok will be discrete and determined by formula (2-31).

For l=0 there exists a solution of equation (2-29). This is a constant. What this constant is equal to, is evident, for example, from the formulas for spins of elementary particles.

Thus, only from the requirements of the finiteness, continuity, and uniqueness of the solution (2-29), and hence also (2-1), quantization occurs, discrete levels arise! And thus any other values of all listed above sizes can not be realized in the nature!

We will consider this the fourth signal in favor of the theory of gukuum.

We develop this idea. The classical solution of the wave equation immediately offers us a discrete spectrum of solutions. Mathematics is given to us from above and its laws are absolute. Consequently, applying mathematical laws to the description of gukuum, we can conclude that the gukuum allows and passes in itself not any of the fluctuations and their changes, and the fluctuations and changes are discrete. It is possible that nondiscrete solutions of the wave equation also exist in a gukuum. But these decisions have no effect on the world in which we live. We are not allowed to know whether they or our world are the only one. Also, while the question of the existence of worlds with a different level of discretization, from another Planck constant, which can also pass through us, is open, and we through them without any influence and interaction.

Physical parameters of elementary particles.

Now let's pay attention to the energy of the lok. The above proof of the discreteness of the square of the angular momentum of an object in our gukuum theory is objective and unambiguous. And behind this discreteness, there are other discreteness with necessity. If we take into account the formula of mechanics:

$$E_L = \frac{\overline{M}^2}{2I}$$

(2-32)

I is the moment of inertia of the object.

then the spherical harmonics, which are eigenfunctions (2-28), also characterize the real density of the energy of the elementary particle (= the mass of the elementary particle = the density of the stress field of the lok) distributed in space. The same quantum levels as in M^2 arise also in the energy (mass) of elementary particles.

In traditional quantum physics, further calculations hardly make sense. What can be discrete levels in the mass of a free electron? In this physics the mass of "point" elementary particles is constant. And it can grow only with the growth of its speed according to Einstein's formula. But in the theory of gukuum the following formulas are natural and much clear.

The approximate relation obtained from (2-31) and (2-32):

$$E_L = \frac{\hbar^2 l(l+1)}{2I}$$

(2-33)

l = 1,2,…

The energy of the fixed loks can vary. These vortices can absorb energy quanta. And contrary to the existing opinion, it is assumed that free electrons can absorb photons. It is only necessary to do the corresponding experiments, and not to refer to the outdated theoretical calculations. But energy and mass are connected inseparably, therefore, and the mass of loks has a discrete spectrum.

Further, if we represent the moment of inertia of the lok in the form

$$I = k \bullet \mu \bullet R^2$$

(2-34)

where the values on the right side, respectively: k - some coefficient (without special physical meaning, will be refined below), the mass of the lok and the square of its effective size, then taking into account (2-9) in the form

$$E_L = \mu \bullet c^2$$

(2-35)

and substituting (2-34) and (2-35) in (2-33), we obtain a new formula for the relationship between the particle size, its mass and the degree of its energy excitation:

$$k \bullet \mu^2 \bullet R^2 = \frac{\hbar^2 l(l+1)}{2c^2}$$

(2-36)

where as before l is equal to any integer. Truth apart from zero, but now we will not focus on this. It can be assumed that in the unexcited state, that is, for l = 1, a formula should be obtained for the Compton wavelength of an elementary particle (2-12). Comparing formulas (2-12) and (2-36), we obtain, for example, for an electron:

$$(\frac{\lambda}{2})^2 = \frac{\pi^2 \hbar^2}{m_e^2 c^2} = R_e^2 = \frac{\hbar^2 l(l+1)}{2k m_e^2 c^2}$$

(2-37)

whence

$$k = \frac{l(l+1)}{2\pi^2}$$

(2-38)

As you can see, the result does not depend on which lok is considered, the electron or the proton. As can be seen from (2-38) and (2-34), the moment of inertia of elementary particles increases with increasing energy excitation.

In general, there is a contradiction with the generally accepted opinion that elementary particles do not have energy levels in the free state. But we are going along non-trampled routes ...

The main thing for us now is the numerical estimation of the coefficient k. In the unexcited state of the lok, i.e., l=1, a value of k equal to about 0.1 is obtained. Let us remember this value for the following exposition.

Apparently, the difference in the coefficients in the formulas for the electron spin (S_e=√3/2ħ) and the spin of the proton (S_p=1/2ħ) appears due to the difference in the geometry of these loks, that is, because of the difference in the parameter l in the formula (2-38). But this number also characterizes the excitation energy. Some of them are always more excited.

The consideration of formula (2-36) reveals, in principle, the ability of "particles" to increase the dimensions without changing their mass. Or increase the mass at a constant size. Or both. What is actually happening is completely imaginable in the light of the theory of gukuum, but it is necessary to work, specify, and detail.

Опубликовано:
https://www.academia.edu/34576327/The_emergence_of_quantum_mechanics_in_a_gukuum._Part_2

20. The emergence of quantum mechanics in a gukuum. Part 3.

Abstract. It is shown that if we assume that the electron and proton are solid balls, then the speed of their rotation on the surface is close to the speed of light. This can not be an accidental result, but has no explanation in traditional physics. And in the theory of the elastic universe, this is easily explained.

Spin and linear velocity of internal points of elementary particles.

Reasoning about the form or internal arrangement of elementary particles, for example an electron, in modern physics is easily referred to as "meaningless". Since their eyes are not visible, then there is nothing to ask! Microbes were born with the invention of a microscope (Mikhail Genin). Attempts of such reasoning always end with

the words that "laws and concepts of classical physics cease to operate in the microcosm". If the location of the object itself is unknown, this is an Ψ-function, then what about the device? Smeared - and that's it.

The same is said about the physical meaning of the angular momentum - the spin of an electron (proton). Rotation as it were, the spin is also there, but to ask how this rotation looks "does not make sense."

There are analogies in the macro world. Let's say we want to ask the oligarch: how did you earn your billions? - And you answer: your question does not make sense! Commercial, they say, a mystery.

And we will ask! We even try to determine the linear velocity of any point of the electron as it rotates. And at the same time a proton.

And suppose the simplest thing is that an electron (proton) is a tiny solid ball. We assume that the main central part of this sphere has some average density and certain physical parameters close to known experimental and theoretical values for an electron or a proton. We drive both particles.

We have experimental values:

- rest mass of the electron: m_e ;
- rest mass of the proton: m_p ;

} (2-46)

We have theoretical values obtained from quantum physics:

- electron spin ($S_e=\sqrt{3}/2\hbar$) ;
- spin of the proton ($S_p=1/2\hbar$) ;

} (2-47)

As the linear dimension of the object, we take its Compton wavelength, confirmed both experimentally and theoretically:

electron:	proton:
$\lambda_e = \frac{2\pi\hbar}{m_e c}$	$\lambda_p = \frac{2\pi\hbar}{m_p c}$

(2-48)

This is the diameter of the object. The radius is 2 times smaller:

electron:	proton:
$R_e = \frac{\pi\hbar}{m_e c}$	$R_p = \frac{\pi\hbar}{m_p c}$

(2-49)

Next, we make the appropriate calculations.

1) We calculate the moments of inertia of the objects I_e, I_p. Since we do not know their forms reliably, we introduce the correction factors k_e and k_p, each of which, depending on the shape, can theoretically have a value of almost 0.0 (a needle rotating around the axis) to 1.0 (with the exact form of a wide and a thin "bagel"). (Remember (2-38)). For example, a value of 0.4 is achieved with the exact shape of the ball. The real form of an elementary particle differs markedly from a ball or a donut, which is more extended in space and has a density distributed in space.

electron: $I_e = k_e \bullet m_e R_e^2$;

proton: $I_p = k_p \bullet m_p R_p^2$; } (2-50)

2) From the formula $S = I \bullet \omega$, we find the angular velocity of rotation of objects:

electron:	proton:
$\omega_e = \frac{S_e}{I_e}$	$\omega_p = \frac{S_p}{I_p}$

(2-51)

3) This angular velocity corresponds to the linear velocity V_e, V_p "of the surface" of the objects (formulas (2-47), (2-49), (2-50):

The linear velocity of the "surface" of an electron:

$$V_e = R_e \omega_e = \frac{\pi\hbar}{m_e c} \frac{S_e}{I_e} = \frac{\sqrt{3}}{2\pi k_e} \mathrm{c}$$

(2-52)

The linear velocity of the "surface" of an proton:

$$V_p = R_p \omega_p = \frac{\pi\hbar}{m_p c} \frac{S_p}{I_p} = \frac{c}{2\pi k_p}$$

(2-53)

4) We draw conclusions. The result depends on the shape of the object (coefficient k in calculating the moment of inertia) and on the coefficients in the formulas for the spins of the electron or proton (√3/2 and ½). Due to the smallness of $k \approx 0{,}1$, the final result was 1.5 - 2 times higher than the speed of light. But we take into account that in the accepted "homogeneous" model the extreme points of the electron (proton) move faster, the internal ones - more slowly. In short, whatever one may say, on the average, it is about the speed of light. Both the electron and the proton. The result, which can hardly be called random. We spent an hour doing "meaningless" calculations, but got an absolutely meaningful, highlighted result! Probably, this result is also implicitly contained in the quantum-relative theory. But for some reason no one wants to drag him to the light of day.

It's not like that, guys! - said Vladimir Vysotsky. This is not a signal, it's a dilemma: either - either! Either something in half, or something to smithereens. Einstein and Schrodinger deprive the meaning of these arguments, because according to Einstein at speeds of the order of the speed of light, the mass grows to infinity, and according to Schroedinger they have neither shape nor size. However, everything in the world is "relatively" and it is not known what and who is depriving anyone of the meaning. The theory of Gukuum has an answer, according to which the wave vortices in the Gukuum just rotate with light linear velocity! Actually mass - it always moves and always exclusively with light speed. Electron and proton are not a single whole, but each element in them, each point moves along its closed trajectory and not only with the speed of light.

The latest calculations of Part 1.7 are regarded as a serious confirmation of Gukuum theory! And this confirmation is not the last.

Опубликовано:
https://www.academia.edu/34586623/The_emergence_of_quantum_mechanics_in_a_gukuum._Part_3

22. Dynamic electricity. Electricity in the household life.

A conductor with current and a magnetic field.

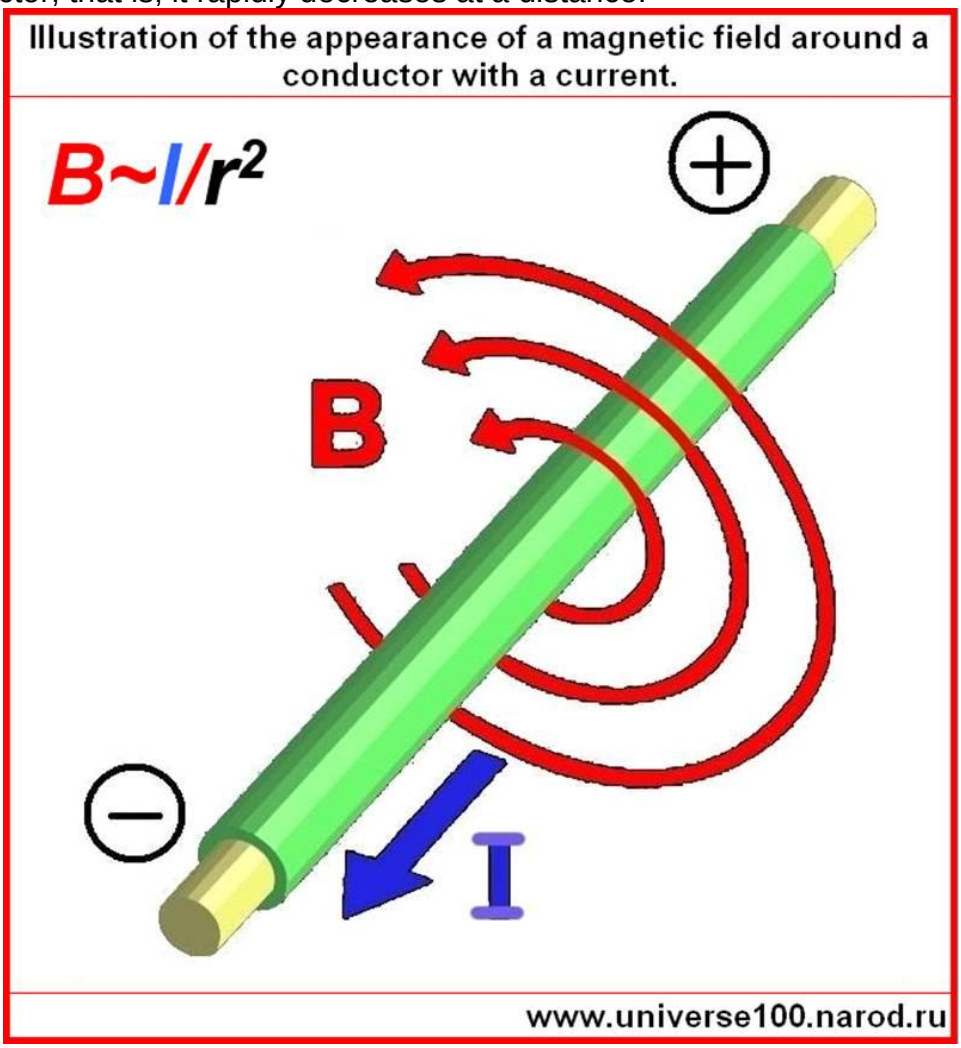
Abstract. The occurrence of a magnetic field as a set of protruding parts of electrons is illustrated. The principle of operation of an electric motor and an electric generator is shown. The fact of the existence of an electric current, and the existence of a magnetic field around it, confirms the terrestrial nature of antimatter, that is, the possibility of a neutral rapprochement of two electrons. Whence follows the possibility of an attracting approach of an electron with an excited free electron.

What do we know about the magnetic field around the conductor.

It is known that a magnetic field appears around the conductor with current. This phenomenon is called the Bio-Savar-Laplace law.

It is known that the magnetic field created by a constant current around a straight cylindrical conductor is first, perpendicular to the conductor; secondly, in proportion to the current in it; and thirdly, it is inversely proportional to the square of the distance from the conductor, that is, it rapidly decreases at a distance.

Illustration of the appearance of a magnetic field around a conductor with a current.



(28-2)

A phenomenon known as electromagnetic induction is also known. It consists in the fact that if the flux of the vector of magnetic induction through a closed contour varies with time, then in this contour an EMF arises, generated by a vortex electric field, which arises from a change in the magnetic field with time.

What do we know about the nature of the magnetic field.

That's what they write about the magnetic field in official sources.

- The magnetic field is deeply interrelated with the electric dynamically. That is, they mutually generate each other with alternating electric and magnetic fields.
- The magnetic field is deeply interrelated with the electric field and in the transition to a new frame of reference. The fact that the magnetic and electric fields are expressed through each other, that is, by and large, can not be unconditionally separated.
- A magnetic field is considered to be a special kind of matter, through which interaction between moving charges or currents is realized.
- Magnetic fields and in the special theory of relativity are a necessary consequence of the existence of electric fields.
- Together, the magnetic and electric fields form an electromagnetic field, manifestations of which are, in particular, light and all other electromagnetic waves.

Well, here is something that can be unearthed?

Is there an "umbilical cord" between the current and the magnetic field?

Let us try to understand within the framework of conventional physics how and by what means this connection is made between the electric current and the magnetic field generated by it. Why is the magnetic field so severely bound by the formula with the magnitude of the current? Why does it not depend on the properties of the conductor, that is, on the diameter, material or resistance of the conductor? Why such a strange direction of the magnetic field, necessarily perpendicular to the current? Whence does the magnetic field know the value of the current in the conductor? How does the magnetic field monitor the increase or decrease of current and proportionally increase or decrease its value? Why can not this field be deceived by changing the current in different time dependencies? So there is something that materially (or information) connects the electric current and the surrounding magnetic field. There is someone the third, the intermediary! But who is this third? More precisely, what is the third?

The mediator's problem is not new. It arises in all matters of the propagation of fields and waves in space.

Let us check whether this intermediary is an energy flow from the conductor to the surrounding magnetic field. After all, it is known that a thermal field is created around the conductor, conductors are heated and the flow of thermal energy from the conductor exists. Are not they of one origin?

Question number 1. Is there a flow of electromagnetic energy from the conductor with direct current to the space to maintain the magnetic field around the conductor? Or in other words, the magnetic field around a conductor with a constant current, it takes energy from the conductor or not?

We answer. Let us consider the phenomenon of superconductivity, for example, at minus 2700C, when practically any conductor becomes a superconductor. Under these conditions, there is no resistance in the conductor, there is no ambient air at such a low temperature, it condenses (vacuum), there is no flow of heat from the conductor, and the magnetic field around the conductor safely exists! This has long been tested experimentally and is used in the technique of electromagnets with superconducting windings. According to this experiment, it can be argued that to maintain a magnetic field around a conductor with a constant current, energy is not expended at all if the current is constant. Once energy is wasted when creating this field, when the current rises from zero to a stable value. The second time, the energy, on the contrary, is pumped to the electrical network when the current is turned off (induction). And in the interval between these events the magnetic field stably exists by itself and, as they say in the people, does not ask for food. There is no flow of electromagnetic energy (radiation) from the conductor to the space, if the current is constant.

It's strange. It turns out that every "umbilical cord" between the field and the current is absent while the current is constant. But each time "umbilical cord" suddenly appears, if the current starts to increase or decrease.

However, there is also a thermal interaction of the magnetic field with air molecules. What happens at -2700 and in a vacuum is one thing. And the fact that at room temperature and in the air - it's quite another.

Question number 2. So, if the "umbilical cord" is cut off, and there is no energy exchange between the current and the magnetic field, then there is no exchange of information between them. Then, even if the current is constant, this magnetic field must eventually be absorbed by the air molecules. Or fly into space. A year passes, a hundred years, everything is forgotten for a long time, those who started this experiment died. A magnetic field is and is and is. And it does not change in size. Where does the field still know its value? Why does not it quiet down quietly? So, "umbilical cord" still remains?

We answer. This contradiction can be explained by the assumption that the "umbilical cord" is invisible and not recorded. This is some kind of new matter.

We come to the conclusion that the "magnetic" field recorded by us around the conductor is actually more complicated, two-component. We record only its magnetic component, but there is also another, unknown to us component of the field. Consequently, Maxwell's laws are not comprehensive. Or is this conclusion not correct?

Question number 3. When the circuit breaks, the current stops almost instantaneously. The magnetic field disappears almost instantly. Where does it go? "For some reason, it's never usually been detailed by anyone." If the "umbilical cord" is cut off, then the field should probably fly off into space.

We answer. It is known that an alternating current produces electromagnetic waves that escape into space. Confirmation of this seems to be the transmitting antennas, as well as easily detectable radio interference in the interruption of electrical circuits. However, the power of these antennas and interference, even with a decrease in distance, is for some reason negligible compared to the power of the original magnetic field. So not everything flies away. Very little flies. The field partially flies into space, and is partially absorbed by the conductor.

Question number 4. Why is a stably existing and stationary magnetic field around the conductor not energized from the conductor (if the "umbilical cord" is cut off), when the current is cut off, it should instantaneously be accelerated to the speed of light and fly

away in the form of a wave ?! It did not fly away before the current was turned off. What does it explode from within when the chain breaks and disperses this field? And here: if the entire field flies away, then why is the power of the antennas and interference radio waves so small when the circuit is broken?

We answer. Summarizing all the arguments on questions 3 and 4, we made a compromise conclusion that the field partially, per cent by 10, flies into space in the form of an electromagnetic wave, and percent by 90, is absorbed back into the conductor. All requirements like are satisfied.

However, in understanding the essence and nature of the umbilical cord, which connects the current and the magnetic field, we have not progressed. That is, within the framework of the generally accepted model of such a phenomenon as the electric current and the magnetic field around it, we can not answer the emerging question of an "umbilical cord" between the current and the magnetic field.

Within the framework of the current physical paradigm, we can not get an answer to many questions of electromagnetism and other branches of physics.
Confirmation of the structure of the electron.

In such cases, science teaches, it suggests that we need to change the paradigm, the model of the phenomenon. It is necessary to reconsider concepts, what is a current? What is a magnetic field? And reject the usual interpretations, because as a rule, it is the familiar concepts that prevent advancement in the matter of cognition.

We discovered, long ago, that an electron has a structure. It has a large size. There is a hypothesis.

Hypothesis. Because of the apparent observable connection between the current and the magnetic field, we assume that the current and the magnetic field are different manifestations, different faces, different parts of the same process - the motion of electrons.

Since the current is the motion of electrons, it means the whole thing is in the electrons. Electrons have length and structure. They are something like hedgehogs. The trunk of the hedgehog runs inside the conductor (current), and the peripheral parts protrude far beyond the surface of the conductor and scratch our instruments recording the magnetic field. This scratch is recorded by the instruments as a magnetic field. More current - more hedgehogs or faster moving hedgehogs, stronger scratch.

Thus, the theory of Gukuum has the answer: there is no purely magnetic field around the conductor with a constant current! In general, there is no pure magnetic field. Magnetic fields - this is the addition of billions of peripheral parts of the current in the conductor of electrons.

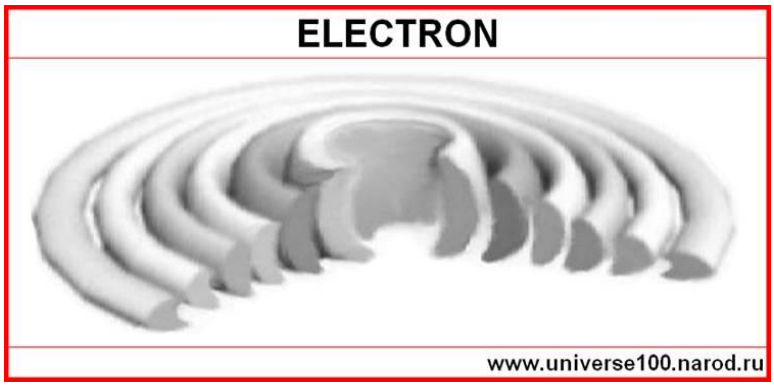
Electrons, under the action of an electrical voltage in a conductor (or in a lightning!) Are lined up in chains. By the way, this fact, the existence of an electric current, and the existence of a magnetic field around it, confirms the terrestrial nature of antimatter, that is, the possibility of rapprochement of two electrons. But electrons have a structure. In lined electrons, all their peripheral regions (nonetheless making up these particles proper) are ordered and form some total ambient stress field in Gukuum, already macroscopic. We record it as a magnetic field.

The total field around the current conductor, from which we only identify magnetic field with our magnetic arrows, is in fact not purely magnetic (purely shear in Gukuum), but is part of the moving electrons themselves, lined up in a chain.

Additionally. To the structure of an electron.

Why does an electric motor work? Why does an electric current generator work? In order to understand all this, it is necessary to turn again to the structure of the electron.

This is a portrait of an electron according to the theory of the elastic universe (the theory of Gukuum).



These are not hard rings, not bagels, but wave rings (explanations and details on other pages), circling at the speed of light, and the neighboring rings move in opposite directions.

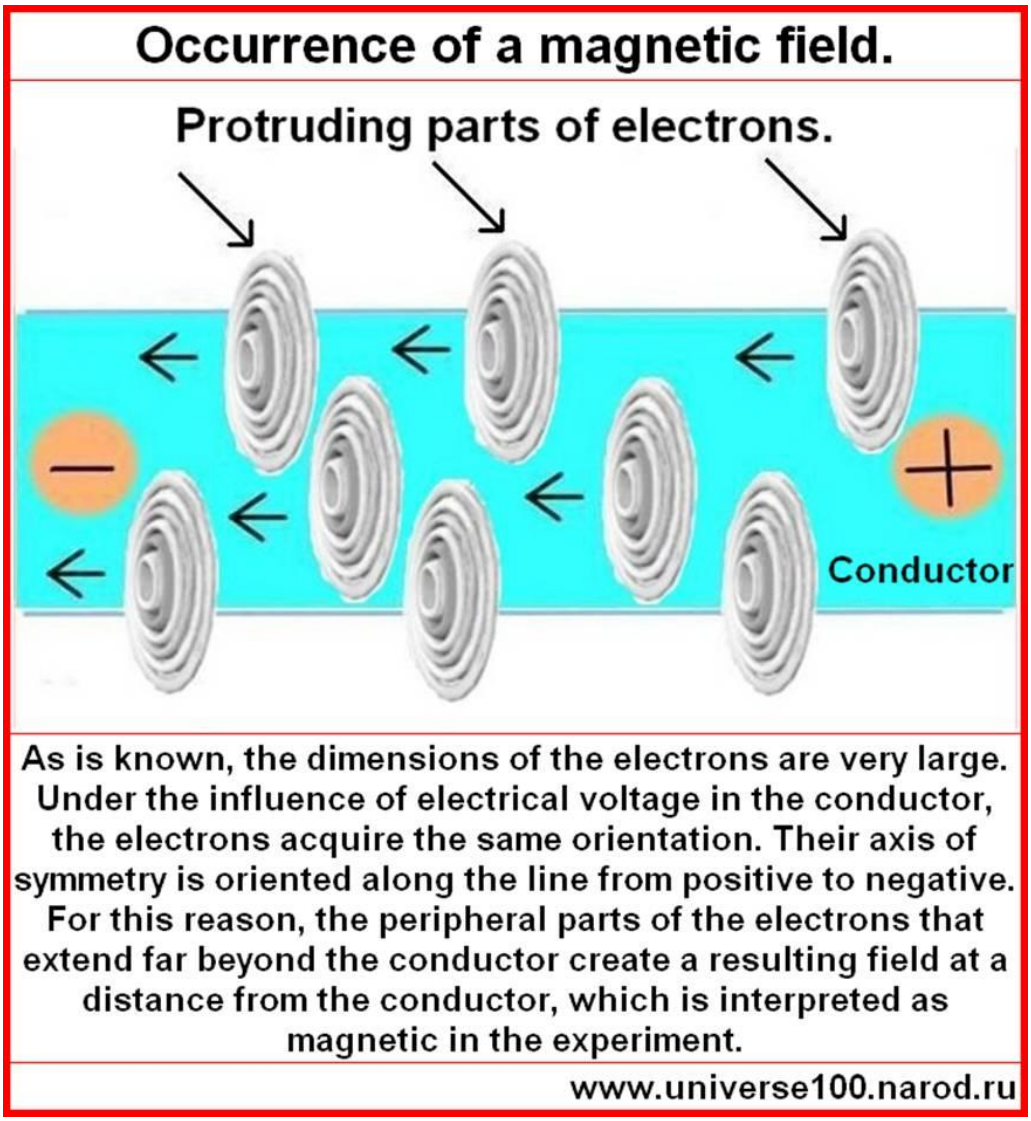
This (approximate) figure shows only the main, nearest rings, there are infinitely many of them. The whole object is a single entity, no part of it can be deleted. And this whole is an elementary particle, an electron. This is not an invention, not a fantasy, not a fit. This is strict mathematics!

Let those who believe that electrons move around the nucleus in atoms do not get frightened by surprise. No, they do not rotate as a whole around the core. Just the core is inside the electrons. When this electron is one, the atom is spherical. When there are many electrons, the atom acquires a multi-petalled appearance, as it is depicted in textbooks on chemistry. Allegedly, "electronic shells." This is in other articles.

Electric motors and current generators.

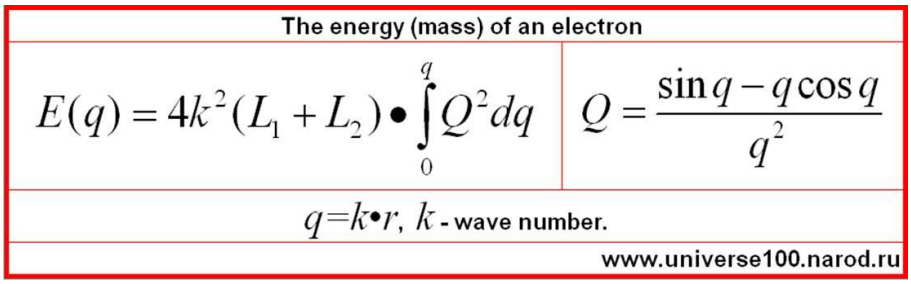
As we found 14 years ago, all particles are wave vortices. Very dense in the center and gradually decreasing in distance from the center. This structure has an electron, except that in the very center of the electron there is a void. Unlike protons or neutrons, which are very small and very dense, the electron is highly smeared in space. Its peripheral departments extend far and manifest in macro effects in dielectrics and conductors.

In the conductors of electrons a lot, they are mobile, free, move chaotically. For this reason, outside the conductor, their peripheral regions give a zero total effect. However, if the electric voltage is applied to the conductor, and in fact the already oriented electrons are brought closer to the ends, the electrons of the conductor are aligned in chains. And the more this tension, the more "disciplined" they are built.



And with such an alignment of electrons, their peripheral regions create some non-zero manifestation at macro-distances from the conductor. This phenomenon is called the phenomenon of the appearance of an electromagnetic field around a conductor with a current. The electromagnetic field detected by the devices around the conductor with current is nothing but the peripheral parts of the moving electrons themselves. If there is no current, then the arrangement of the electrons is chaotic and does not create a magnetic field. But when the voltage is connected to the ends of the conductor, the electrons "line up" inside the conductor, (see the figure above), one by one, a bagel at the bagel, and their peripheral parts create noticeable magnetic fields outside the conductor.

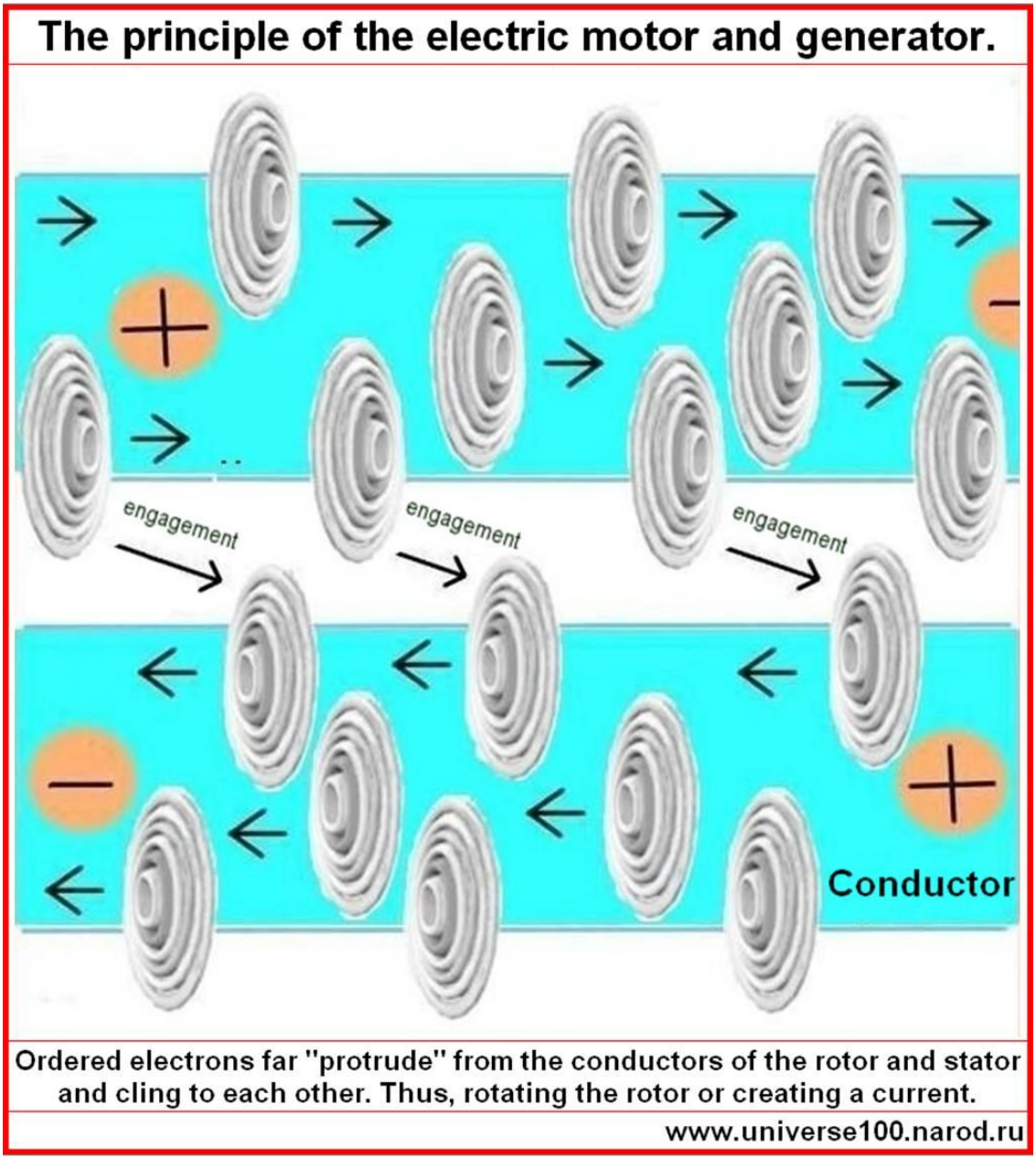
Below is the mathematical formula by which this portrait of an electron is drawn. The energy (mass) of an electron:



As is known, in physics, mass and energy are one and the same, up to a multiplier.

In terms of the mass of an electron or its internal energy, only the first 3 to 4 rings (see the figure) that cover 99% of the mass = the electron energy are important. The remaining rings are negligible. However, there are many electron conductors and the total interaction effect of the peripheral parts of electrons is manifested in the phenomena of electromagnetism. That is, in the phenomenon of the appearance of an electromagnetic field around a conductor with a current.

In this unity and integrity of the mathematical solution lies the great strength of the electron. Electrons are able to line up in chains inside metal wires with voltage (current). And they are their peripheral parts - rings, by the serial number, not even by the first-second, not by the thousandth and not by the billion, but by the quintillion ones, 1) they create a magnetic field around the wires; 2) cling (in the literal sense!) To each other in the windings of electric motors and powerfully rotate their rotors, giving traffic to trains, escalators, construction cranes and submarines. That's what internal forces are in the electron!



Here, in blue, two interacting conductors are depicted in the rotor and stator. The rotor and stator are designed in such a way that the currents in the vicinity of their windings are directed in opposite directions. It is not important at the same time, what currents, constant or variable. The electrons moving in them with their peripheral parts with terrible force press on the peripheral parts in another wire. At the same time, in each winding separately, the electrons move in one direction and do not interfere with each other.

For the future. It is necessary to integrate the energy (mass) of a chain of electrons in the vicinity of a conductor with a current. That is, to find the total contribution of many electrons at a particular point. The dependence $1/r$ appears (most likely). This will confirm the hypothesis of the occurrence of a magnetic field, since the magnetic field also decreases as $1/r$.

Опубликовано:
https://www.academia.edu/34683374/A_conductor_with_current_and_a_magnetic_field

23. Static electricity. Electrification by friction. Ball lightning. Dotted Lightning.

Abstract. The appearance of static electricity from the position of the theory of the Elastic Universe is described. The processes of creation of ball and even lightning are described.

Dielectrics.

From school times, we remember these experiments on electrization by friction. We remember the ebonite wand, silk rag. Or even some other wand and some other kind of rag. We remember the anecdote about ebonite and celluloid. All these tricks are possible with dielectric materials. That is, substances that do not flow electric current.

Static electricity in everyday life.

Static electricity is widespread in everyday life. If, for example, there is a carpet of wool on the floor, then when rubbing against it, the human body can receive an electric charge minus, and the carpet will receive a plus charge. Another example is the electrification of the plastic comb, which, after combing, gets a minus charge, and the hair gets a plus charge. The accumulator of negative charge is often polyethylene bags, polystyrene foam. A plus-charge accumulator is often a dry polyurethane mounting foam, if it is squeezed by hand.

When a person whose body is electrified touches a heating pipe or a refrigerator, the accumulated charge will immediately be discharged, and a person will receive a light electric shock.

Electrostatic discharge occurs at very high voltages and extremely low currents. Even simple combing of hair on a dry day can lead to the accumulation of a static charge with a voltage of tens of thousands of volts, but the current of its liberation is often impossible to even feel. It is low current values that do not give a static charge to harm a person when an instantaneous discharge occurs.

On the other hand, such voltages can be dangerous for elements of electronic devices. Therefore, when working with them, it is recommended to take measures to prevent the accumulation of static charge.

Static electricity in official science.

Here is how static electricity is treated in official science. The electrization of dielectrics by friction can occur when two dissimilar substances come into contact because of the difference in atomic and molecular forces, because of the difference in the work function of the electron from the materials. In this case, there is a redistribution of electrons (in liquids and gases also ions) with the formation of electrical layers on the surfaces in contact with opposite signs of electric charges. In fact, atoms and molecules of one substance, which have a stronger attraction, tear electrons away from another substance.

Interestingly, in official science, as it were, they do not pay attention to the necessity of friction of materials for obtaining static electricity.

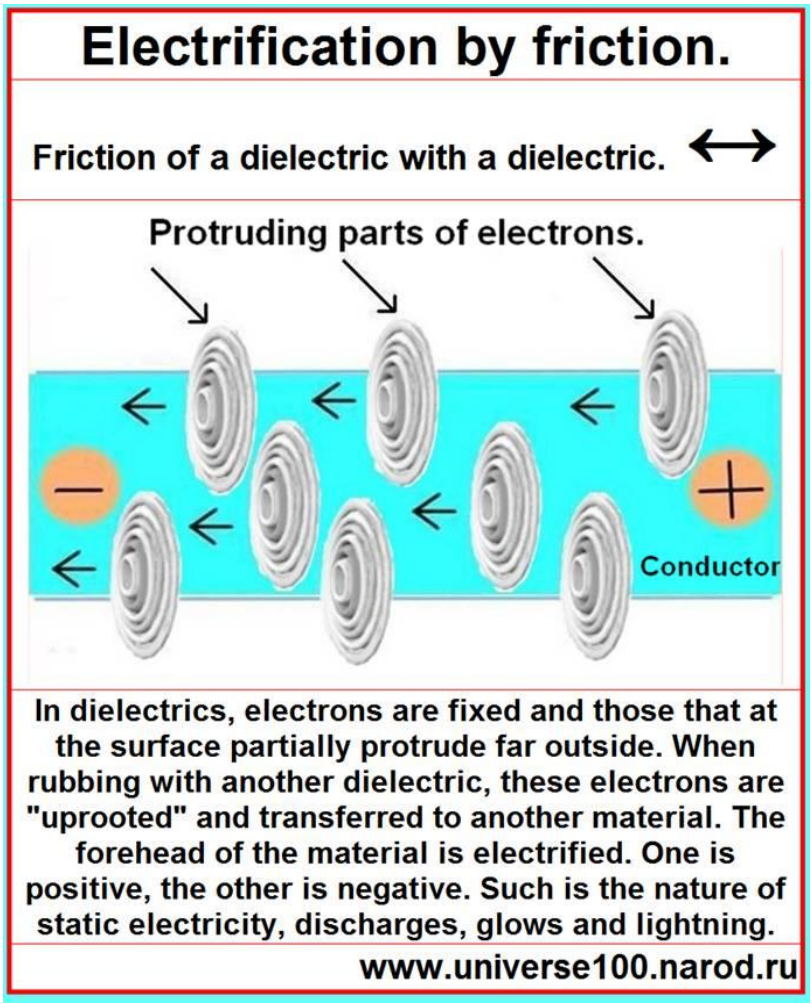
The resulting difference in potentials of the contacting surfaces depends on a number of factors

- the dielectric properties of materials, the values of their mutual pressure at contact, humidity and temperature of the surfaces of these bodies, climatic conditions. With the subsequent separation of these bodies, each of them retains its electric charge, and as the distance between them increases due to the work on the separation of charges, the potential difference increases and can reach tens and hundreds of kilovolts.

Electric discharges can be mutually neutralized due to some electrical conductivity of moist air. At an air humidity of more than 85%, static electricity does not practically arise.

Electrification by friction in gukuum theory.

The essence of what is happening is as follows. Free electrons exist in conductors and in dielectrics. They are very large and in dielectrics they are immured in arbitrary places and in an arbitrary position. Some of them, closest to the surface, protrude outward. And with friction, they are uprooted. Where they then stick - depends on the contacting materials.



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Approach in the woods to the tree. Rub the trunk with your hand, in a mitten, so as not to scratch. Scales of the bark will fall. This is the process of electrification. Bark scales are electrons.

Unlike conductors in which electrons freely float, in dielectrics, electrons are rigidly fixed. Electron is a real cloud consisting of layers. In complex molecules, electron clouds have a multi-lobe structure. And this electronic "flower" seems to be cemented by some of its petals in the dielectric material. The peripheral parts of electrons stick out far beyond the conductor, forming a kind of cactus. As a result, when the "cactus on the cactus" is rubbed, the electrons are

"uprooted" from rubbing bodies. But in the existing physics, there is no satisfactory explanation for electrification. All these stories with a "surface" layer of electrons are not serious.

Lightning

As a result of the movement of the opposing air currents, different temperatures and differently saturated with water vapor, static electricity is also formed. The mechanism of its accumulation can serve as the scraping of surface electrons in droplets of water, and the difference in the potentials of electrons in air and in droplets of water. It accumulates in the clouds and forms thunderclouds. Electric discharges occur between differently charged clouds or, more often, between a charged cloud and the earth. When a certain potential difference is reached, a lightning strike occurs between the clouds or on the ground. To protect against lightning, lightning conductors are installed, conducting the discharge directly into the ground.

In addition to lightning, thunderclouds can cause dangerous electrical potentials on isolated metal objects due to electrostatic induction. In fact, this is the principle of lightning conductors.

So, two counter flows of gas. Look at the picture of electronic shells (from the courses of general chemistry). They are multi-petalled. The petals come off, and these are concrete electrons. Even the simplest atmospheric gas is nitrogen, and it is multilobate in electrons. And the more weight, the more petals. And where these free electrons will stick, where the lightning will strike - it depends on the circumstances.

Here are preserved, purely for the history, some rather obsolete thoughts. But mathematical reasoning and formulas are all correct.

A flash of ordinary lightning is like a conductor with a current. And lightning in the same way creates around itself a magnetic field. These processes are similar. As we have just established, after switching off the current or, equivalently, after the lightning goes out, the surrounding magnetic field is partially radiated into space, and partially absorbed ... Mmm ... And what is absorbed? There is no guide. So all the same 100% of the field is emitted? That is, 10% of the field was radiated immediately, and the remaining 90% of the field was poked with a muzzle - there is no conductor, there is nowhere to be absorbed. What to do? The host waits for an answer. And experts in four votes against two decided to also radiate into space.

Household glitches and barrels.

As we established earlier ([23]), when a current breaks in a circuit around the conductor, clusters of a "high-grade" field are generated by electrons leaving in chaos. And, in any experiment, with the weakest current, these clots of 90% are not going anywhere after the current is cut off.

After each click of the switch, in all likelihood, too, a clot is formed, a small "ball lightning"! Only its field is very weak and does not cause a visible glow in the air molecules passing through it. Therefore, it is not noticeable and not dangerous. Of course, it later all the same collapses, dissolves due to interactions with air molecules or surrounding objects and wires. But its hidden influence on the organism is quite possible. In rooms where there are many switches, electrical appliances, wires and electric motors, some unpredictable and yet inexplicable effects on the body, glitches and drums are quite possible. Full fiction: some people can, in principle, accumulate in themselves these invisible fireballs. For example, in the place of work. Can carry this "spoilage" in themselves and with their help influence other people. At the same time knows what he thinks about himself. Also, purification procedures from them, in principle, are possible.

Ball lightning.

A small historical digression. What does the ball lightning consist of? Why is it stable? How is it born? Why is this energy intensive? Why does the great Einstein in all four volumes of his works never mention ball lightning? Answer: there is no mathematics. But very many studied it. Lists of literature in the works are the most extensive. People spent their whole lives on solving

this puzzle. And all interested could not put forward the original assumptions, and were content only with chemical hypotheses.

The main content of most hypotheses is the combustion of something in the atmosphere. Various variants of substances are proposed that for one reason or another are supposedly accumulated in the atmosphere and later ignited by lightning and then fly in the air, frightening eyewitnesses, penetrating into narrow holes and cracks, keyholes. The proposed material is not intended to review all these hypotheses and mention all of their authors. All these assumptions on closer examination are absolutely incapable of criticism. It is stated only that each of them explains only a part of the properties of ball lightning, entering into an insoluble contradiction with its other properties or with the process and the possibility of its formation. Despite this, the authors of each hypothesis persistently insist each on their own version.

Dotted Lightning.

There is another close natural phenomenon, and even less studied: a dotted lightning. This is sometimes a few seconds in the sky a dotted trail after a flash of ordinary lightning. It is proved that this is not an imprint on the retina of the eye from lightning.

The dotted lightning looks like a luminous dotted line running through the clouds or from the cloud to the ground. The trajectory of an even lightning has no branches and, as a rule, resembles a segment of a sinusoid. This is a very rare form of lightning.

Objects of the type of an even lightning in nature.

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Magnetic field of the Earth. Hypothesis.

The question arises: are there other physical objects localized in space other than ball lightning? Let us recall the magnetic field of the globe, its rather strange changes with altitude, its vaguely understood origin, its millions of wanderings of poles. And is not there a giant size ball lightning ?! In which the quantum levels lie beyond the reach of terrestrial molecules and their quanta; its magnetic field is calm where it permeates, and where the globe circulates; the center of gravity coincides quite naturally with the center of gravity of the Earth; it is able to absorb additional energy from the Sun and from ball lightning produced in the atmosphere, thereby maintaining its equilibrium state ... Of course, this is only an unlikely assumption.

Microscopic ball lightning.

Well, in the microsphere - is it possible "life" of microscopic ball lightning. Are they there? - The answer is the hypothesis: - Are the elementary particles - are not these "very small ball lightning"? Or, re-reading in the opposite direction, the usual ball lightning - are not these gigantic sized elementary particles ?! So, almost elementary, we unexpectedly approached the great solution of the problem over which the great Einstein fought for several decades unsuccessfully - a unified field and substance theory.

All the same atmospheric glow and luminescence, from polar and coronal to ball and even lightning, have a single nature - it is the glow of material particles moving through the field.

Ball and dotted lightning from the point of view of the theory of gukuum.

With the advent of the theory of gukuum, there are suggestions about how things stand in reality. We recall the ball lightning and even lightning observed after the usual lightning flashing. Nature has long ago made a man a clue in the form of occasional observed ball lightning and even lightning. Mentally, we will represent two different types of lightning and, accordingly, two different ways of their extinction.

The first type of lightning: a single spark of enormous power that flies between electrified objects. Neither before nor after this lightning is there anything, no discharges. The "field" around it is close in shape to a spherical shape. After neutralization of this lightning remains a spherical clot of the field, which generates what? - Suppose that the ball lightning.

The second type of lightning: a fairly long steady and powerful filamentary discharge, gradually damped to zero. In this case a stable cylindrical field forms around the lightning. Which exists for some time after the lightning goes out. And this field breaks up first into the cuts, which generate, as now we begin to understand, the even lightning. This cylindrical field is also described by the corresponding cylindrical solution (two-dimensional circular standing waves).

Let us return to the ball lightning. From the foregoing it follows that after the extinction of an ordinary lightning (or break of a circuit with a current), the ordered state of the electrons is destroyed and ceases. The peripheral sections of the electrons lose their unified orientation and the total surrounding field (the stress field in gukuum) quickly vanishes. But there is the principle of Lomonosov: nothing disappears quickly and without a trace! Recall that moving "hedgehogs" scratch instruments and gukuum, creating a magnetic field. Also, the "hedgehogs" that leave the order in the mess are finally "scratched" a gukuum. Dispersed fields, which are part of the electrons, are induced mechanically in a gukuum by others. In place of a powerful field from the current - ordered electrons (lightning) in gukuum, there is no longer a voltage field associated with the electrons themselves, but almost the same. At this point, a clot of the stress field in gukuum is formed and remains. Now this is no longer part of the internal electrons of the current conductor, but a free clot of the field in space. As already mentioned, this field is related to the one that forms elementary particles. This field contains an additional (possibly, in terms of, "torsion") component.

The process of extinction of ordinary lightning can be represented differently. It is possible that such stable elementary particles - electrons, in fact, are torn to pieces after the discharge and the extinction of lightning. But these parts, so long as the laws are not studied, can not be restored each by itself, as part of the cut hydra. One part, as it were, containing the core of an elementary particle, is easily restored by taking energy from surrounding atoms. And the other part, as it were, "without a nucleus" gradually dissolves into the surrounding substance. Thus, another sensation is possible: the electrons are very stable, but are completely fractured into parts. Only these parts can not be kept. The main part quickly grows back into the electron, and the smaller part dissolves to zero. It is possible that this happens with protons.

Summary. The ball lightning is a formation of a non-ordinary type localized in space. This field, according to the action on the magnetic needle, is very similar to electromagnetic, but more complex (contains an additional component), and because of this, orders of magnitude more energy-intensive. Not a single drop of energy would have gone into the external environment, and the ball lightning would have existed forever, had it not been for rare interactions with air molecules, which for the most part freely fly through it. These interactions generate light that comes from ball lightning and allows it to be seen.

Incidentally, in ball lightning, the same phenomenon of "quantum mills" is also taking place, which plays a decisive role in the emergence of life ([29] - [30]). When energy is taken up by a

large portion, and then emitted by small, in our case, eye-registered portions. And in the process of the origin of life - absorbed by the visible eye quanta of sunlight, and radiated thermal, infrared quanta.

Let us touch on the methods of artificial production of ball or even lightning. As we have established above, the ball lightning is pulled together from the usual lightning, like a rubber fingertip, rolled or pulled from a finger. In the same way, it either drops into a toroid (a conventional ball lightning), or is pulled together in the form of a cylinder (even lightning). This should be the basis for the methods of obtaining it. In the first case, it is necessary to pass a powerful spark between the electrodes. And in the second case, it is necessary to maintain a string of electrical discharge for a while.

Hypothetical formulas.

So, here is the hypothetical formula of ball lightning in spherical coordinates:

Hypothetical formula for objects like spherical Lightning (in spherical coordinates):

$$W(r,\theta,\varphi,t) = \frac{C_j}{\sqrt{r}} \bullet J_{j+\frac{1}{2}}(kr) \bullet$$

$$\bullet (P^*_{j,m} - Q^*_{j,m}) \bullet \sin(m\varphi) \bullet \sin(m\theta - \omega t)$$

Here $\overline{W}$ – displacement vector of the elastic element space gukuum.

k - Wave number. i=1,2,3 (cartesian);

j,m - integer; C_j - Arbitrary;

$\omega = c \bullet k$; c - Speed of light.

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Hypothesis. But is not ball lightning converted at its final collapse into several million hydrogen atoms ?! Or at least one hydrogen atom. This just simulates the formation of the universe, matter. The unstable ball lightning turns into stable hydrogen atoms. Hence the explosion, cotton - an increase in volume.

On the cylindrical solution.

The basic solution that has a physical meaning, or the Hypothetical formula for objects of the type of an even lightning (in cylindrical coordinates)

$$x = \rho \bullet \cos\varphi, \quad y = \rho \bullet \sin\varphi, \quad z = z;$$

has the form:

The hypothetical formula for objects of the type lightning (in cylindrical coordinates):

$$W_i(\rho,z,\varphi,t) = c_i e^{\mu i k z} \bullet Z_m(\rho\sqrt{k^2+K^2}) \bullet$$
$$\bullet (a\cos m\varphi + b\sin m\varphi) \bullet \cos(\omega t + \gamma)$$

This solution should be mathematically a kind of endless garland of sausages along the Z axis.

Here $\overline{W}$ – displacement vector of the elastic element space gukuum. i=1,2,3 (cartesian); m - integer;

c_i, γ, k, K - arbitrary;

$\omega = c \bullet k$; c - Speed of light. Z - Arbitrary

Cylindrical Bessel functions of the first kind.
These are sinusoidal cylindrical waves.

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This solution mathematically should be a kind of endless garland of sausages along the Z axis. And if it is physically feasible, then it is very likely that this object will turn out to be an Anniversary Lightning. Some analysis of this decision is made, here it is not given. The energy integrals converge (in terms of one sausage). But we postpone it for the future.

In addition to the cylindrical solution, one can certainly perform work as well as over a spherical solution. That is, similarly to find those three types of solutions, and the corresponding objects that generate the solution of the wave equation in cylindrical coordinates.

Опубликовано:
https://www.academia.edu/34694209/Static_electricity._Electrification_by_friction._Ball_lightning._Dotted_lightning

24. How the universe was created.

Why are protons and electrons in the universe the same?

In nature, there are processes of particle annihilation. Consequently, there is a likelihood of inverse processes, especially in the light of Guccum theory. That is, a collision at one point of a pair - three of some wave objects or other wave processes can give birth ... What? The following arguments make sense.

As a result of double-triple interactions of waves or other processes, twisted waves appear that, according to the law of winding, form localized objects. The properties of Guk and mathematical formulas miraculously are such that it is the pair - a heavy small center and a light surrounding cloud - that are best able to absorb any extended swirling wave. Because it is not easy, because the laws of the wave equation are discrete laws. The proton is formed small and heavy - these are the laws of mathematics. He captures a huge mass, but having a small size can not have a big spin. This spin remains in the

light surrounding cloud. But again, miraculously from this cloud an electron is formed, which has a huge (relative to its mass) spin and great freedom over energy levels. This allows us to settle all the equalities of energy, momentum, and all this in a discrete expression when the hydrogen atom is formed. Due to the properties of Guccum, all infinitely long ago, the originally formed objects were identical and they were hydrogen atoms. Their more dense relatives - neutrons were most likely formed later, in nuclear reactions. The only way. Here is the answer to question # 1. The confirmation is that until now hydrogen is 90% of the total mass of the universe. All the other elements arose in the nuclear furnace of stars.

More later. We have mentioned just above that all electromagnetic formations, including photons and even radio waves, have a localized nature. This circumstance strengthens the reasoning. Because even the collision of two radio waves is a collision of localized objects.

Here's another question. The masses of an electron, a proton and other particles - why exactly these? At the beginning of the article, there was already a response about the particle size. Everything is determined by the mechanical parameters of the guacum and its Majesty Mathematics. Here is the same answer.

Loks with large (j, m) are also allowed. And they need research for existence in reality.

But is not ball lightning converted at its final collapse into several million hydrogen atoms ?! This just simulates the formation of the universe, matter. The unstable ball lightning turns into stable hydrogen atoms. Hence the explosion, cotton - an increase in volume.

Conclusions.

The study of localized solutions of the wave equation opens up an abyss equal to the universe. All that exists in the universe exists in the theory of locks. The converse is also true. Now an electron, a neutron and a proton are practically identified. There were no obvious contradictions with the experimental and generally accepted formulas. All orders of magnitude converge, and in most cases the quantities themselves. The phenomena previously unclear were received. New relationships between world constants have been obtained. This is victory.

The final victory will be achieved when the charge of elementary particles is identified. While this is a riddle - something absolutely identical for a proton and an electron and exactly equal to zero for a neutron. Other elementary particles also need identification: mesons, etc. The results achieved will form the basis of AXIOMATIC PHYSICS. This is no longer a dream, but a harsh reality.

25. Elastic universe and the theory of relativity.

That's what Einstein's official theory of relativity tells us.

Special theory of relativity = special relativity = relativistic mechanics - a theory that describes the motion, the laws of mechanics and the space-time relations that determine them, at velocities close to the speed of light. In the framework of the special theory of relativity, Newton's classical mechanics is an approximation of low velocities. The generalization of STR for gravitational fields forms the general theory of relativity - general relativity.

The deviations in the flow of physical processes, described by the theory of relativity, from the effects predicted by classical mechanics, are called relativistic effects, the rates at which such effects become essential-relativistic velocities.

The postulates of Einstein

SRT is completely deduced on the physical level of rigor from three postulates (assumptions):

1. The principle of Einstein's relativity is valid - the expansion of Galileo's relativity principle.

The principle of relativity is a fundamental physical principle, according to which all physical processes in inertial frames of reference flow identically, regardless of whether the system is stationary or it is in a state of uniform and rectilinear motion.

It follows that all laws of nature are the same in all inertial frames of reference.

Distinguish between the principle of relativity of Einstein (which is given above) and the principle of relativity of Galileo, which claims the same, but not for all laws of nature, but only for the laws of classical mechanics, implying the applicability of Galileo transformations, leaving open the question of the applicability of the principle of relativity to optics and electrodynamics .

In modern literature, the principle of relativity in its application to inertial frames of reference (usually in the absence of gravity or neglecting it) usually appears terminologically as Lorentz-covariance (or Lorentz invariance).

2. The speed of light does not depend on the speed of the source in all inertial frames of reference.

3. Space and time are homogeneous, space is isotropic.

Note. In recent years, great work has been done by astronomers in the study of dark matter. It is established that dark matter is distributed throughout the cosmos. In the global sense, when galaxies move, the trajectories of galaxies do not obey Kepler's laws. This means that Einstein's principle of relativity does not hold. And this, in turn, means that studies of dark matter are not true (and these are studies on very modern equipment and very modern methods). Or Einstein's principle of relativity is not true, and with him the whole theory of relativity (and it was done on very weak equipment and very primitive methods and experiments). In any case, Einstein's dark matter and the theory of relativity mutually exclude each other.

Early assumptions of Gukuum theory.

The hypothesis mentioned by Einstein, and earlier researchers about the jelly-like universe is known. The cosmic vacuum by its properties transmit electromagnetic waves close to the elastic body, to the "elastic jelly". However, Einstein, being in captivity of his own worldview, capturing his senses and the views that existed in his epoch, threw off the hypothesis about the possibility of a jelly-like universe. He considered it impossible that "the planets pass through the air - jelly without encountering resistance" (quote). That is, Einstein could imagine any Vacuum in space, but matter, matter on the atomic level were for him invariably something solid, sharply different from outer space. Empty Cosmos and solid atoms - this is the essence of his Theory of Relativity. This is the essence of all modern physics. We do not suggest anything else to the senses. The theory of Einstein is an extension of our subjective perception of the world around us to the category of Truth. This is as ridiculous as if creatures that perceive the world in black and white would find the world truly black and white. But it's amazing that it's just as ridiculous as if the people perceiving the world were considered colored by color. There is no color, no length, no time in the universe. All this is a comparative means for our perception of reality and tools for orientation in our life, worked out in the process of evolution and in the struggle for existence.

A lot of modern physicists addressed the model of elastic vacuum. It is enough to include the search engine with the phrase "elastic vacuum". But none of them advanced further than empty exercises with matrices and verbal gymnastics. When the time

comes, a survey of these works will certainly be done.

The universe was arranged quite differently than all the best minds of Mankind had expected until February 2003. And more accurately: one of the hypotheses of the 19th century, which were mentioned at the same time, with all of them rejected and spaded, at first glance hopelessly stupid and ridiculous, was absolutely true. This is a hypothesis, mentioned by Einstein, and even earlier researchers, but immediately rejected by all of them. This is the hypothesis of a jelly-like universe. Einstein, being in captivity of the views existing in his epoch, threw off the hypothesis about the possibility of a jelly-like universe on the move, because it is impossible that "the planets pass through the ether-jelly without encountering resistance." However, now, in the light of new ideas about the possibility of localized stress and strain fields in Guccum, a very plausible hypothesis appears that all the elementary particles that make up "solid bodies" are oscillations of the jelly itself, through which they would have to "wade through". But it will not be difficult for them now. This hypothesis easily describes both elementary particles and ball lightning and a flash zipper. In the same way as electromagnetic waves under the new hypothesis are simply waves of the type of sound in this ether-jelly. If we take into account the gravitational field as a field of elastic stresses in cosmic jelly, then a single, comprehensive theory of all fields and all elementary particles appears. There is no contradiction with the theory of relativity of Einstein here. Because the very notion of a "solid body" is discarded, which lies both in the basis of Einstein's theory, as well as in all the experiments confirming it, and in interpreting the results of these experiments. Because the choice of the coordinate system for description simply changes.

Our suggestions for the experiment.

© Experiment. Project.

Definition of the Absolute Countdown System.

Essence of the experiment. In the city of St. Petersburg there is the Isakievsky Cathedral, in which Foucault's pendulum is hanging and without any benefit. (Alas ... This pendulum is now dismantled, but it can be temporarily restored, and there are other pendulums in other cities, and can be hung in any high room). Therefore, it is only necessary to come to S.Peterburg and agree with his leadership on the need for some scientific measurements and lightly fence the place so that the public does not interfere. Or, you can find a deep well or a high flight of stairs and hang the pendulum there. For example, in the stairwell of the Lenin Library in Moscow.

It is necessary to calculate how many oscillations, roughly, the pendulum (an integer) does in 12 hours. This is purely a preparatory action. Let this amount equal N. Then measure with high accuracy the time during which the Foucault pendulum makes N oscillations at that time of the day when the motion vector of the cathedral (due to the rotation of the Earth around the axis) in space coincides with the motion of the Earth in space. Roughly speaking, this is from 6.00 to 6.00 in the morning. To fix very precisely this time, to hundredths (yes even to millionth) fractions of a second. Then measure the time of making the same number of fluctuations N in the daytime, from 6.00 am to 6.00 pm. And compare these times. I do not want to immediately guess what will be more, and what is less, but the difference should be! And to "align" the experiment, you can make a measurement from 00.00 nights to 12.00 a day and from 12.00 to 24.00 at night. Each time, the same number of oscillations N is measured, approximately given by the average for this period of 12 hours.

Variant: to measure the number of oscillations not in 12 hours, but in one hour, when the linear velocity of the Earth's surface in this place is closest to the linear velocity of the center of the Earth when it rotates in orbit. Various variations of the Foucault pendulum experiment are possible.

The difference should be and this again (after A.Dovzhenko's experiment) will experimentally disprove the main postulate of the EO of Einstein. We live in an era of spurt of technology and a spurt of reason towards the Truth, towards the true picture of the World. And this picture is expected to be very unconventional and mysterious.

Conclusions.

In principle, replacing the Theory of Relativity with the Theory of the Absolute changes little. All the square roots in the formulas will remain, but they will acquire a different meaning and will appear in a different context. The system of calculating the theory of relativity simply changes, as we have always mentioned. However, you will have to change many texts in textbooks, and this is not cheap. However, the renaming of streets is also not cheap. The truth is important and it is she, the truth, which should form the basis of future physics.

In this case, you must be extremely cautious and again and again to check and double-check, seven times to measure before cutting off the theory of Einstein's Relativity. It is the basis of a huge physics building, here the fates of millions of people in the whole world are intertwined. And it will be necessary to replace this foundation very carefully so as not to destroy the whole building.

Yes, here is another author who offers his method of determining the speed of the solar system. About this here: **http://ntpo.com/physics/studies/51.shtml**.

And one more sentence of the experiment on testing the theory of relativity: **http://www.sciteclibrary.ru/rus/catalog/pages/8703.html**.

26. Why there are no black holes. Deadlock hypotheses of modern physics.

Abstract. The error of mathematical fantasies in the region of large densities inside stars is shown. The impossibility of infinite density growth is shown. An alternative description of the processes in the masses of massive stars is proposed.

Introduction.

Who is the loudest shouting "keep a thief"? "We know who, of course, is a thief himself." Ancient folk truth, established experimentally for many centuries of history.

Who is the loudest screaming about the fight against pseudoscience? Well? We develop an analogy. - Correctly. Louder scientists themselves are shouting loudly about the struggle against pseudoscience.

But, after all, are our ugly people fighting against pseudoscience ... official scientists ?! They even set up a commission to combat pseudoscience ?! "That's their way, which they proclaimed to be true-it's not at all like that." He is mistaken.

How so? Why? We demand an explanation!

Excuse me. Black holes do not exist. In total there will be many parts. In all areas of science. There, in official physics and astrophysics, the Augean stables.

How the "black holes" were invented. "Black hole" Michell.

The concept of a massive body, the gravitational attraction of which is so great that the speed necessary to overcome this attraction (the second cosmic velocity), is equal to or exceeds the speed of light, was first expressed in 1784 by John Michell. From his calculation it followed that for a star object with a radius of 500 solar radii and with the density of the Sun, the second cosmic velocity on its surface would be equal to the speed of light. Thus, the light can not leave this stellar object, and it will be invisible.

Michell suggested that in space, there can be many such stellar objects that are inaccessible to observation.

Here is the calculation of Mitchell. The potential energy of the body in the gravitational field of a stellar object is equated to its kinetic energy:

$$-\frac{GMm}{r}+\frac{mv^2}{2}=0;$$

where G is the gravitational constant, M is the mass of the stellar object, m is the mass of the body under study, v is the velocity of the body, and c is the speed of light.

That is, the speed of the body necessary to overcome this gravitational field must be more than:

$$v^2=\frac{2GM}{r};$$

It can be seen that for some ratio of M and r, the velocity of the body necessary for detachment becomes more than the speed of light. That is, a ray of light can not tear itself away from such a stellar object.

The maximum possible speed, as it became known later, is equal to the speed of light. We denote by r_g the distance from the center of the gravitating mass, at which the particle velocity required for detachment becomes equal to the speed of light $v=c$. Then

$$r_g=\frac{2GM}{c^2};$$

That is, the body falling inside this radius already definitely can not leave this star object or the given black hole. It is important only to compress this star object to such a small radius. Because the orders of the ratio of the quantities here are quite prohibitive.

Addition from Schwarzschild

Schwarzschild generalized and developed the fantasies and calculations of Michell. The above radius was named Schwarzschild as the gravitational radius of a black hole.

For example, a black hole with a mass equal to the mass of the Earth would have a Schwarzschild radius of only ... 9 mm (that is, the Earth could become a black hole if someone could squeeze it to that size). For the Sun, the Schwarzschild radius is about 3 km.

Objects whose size is closest to their Schwarzschild radius, but which are not yet black holes, are neutron stars.

The violent fantasies of astrophysicists.

Neither in 18, nor in 19, nor in 20, nor in the beginning of the 21st century did scientists have any idea of the structure of elementary particles. Therefore, they bravely fantasized about the compression of matter to colossal densities. Let's say that scientists fantasized that elementary particles are such solid balls. Then there can be neutron stars. That is, there are stars in which matter is compressed to close packing of neutrons. And something similar in the cosmos was indeed discovered. Very massive and very dense star objects. But why not squeeze even harder? What can stop a mathematician's fantasy?

Schwarzschild found a formula for the density of black holes, dividing its mass by "the volume enclosed by the horizon of events":

$$\rho = \frac{3c^6}{32\pi M^2 G^3};$$

As can be seen from the formula, the average density decreases with increasing mass of the black hole. Thus, if a black hole with a mass of the order of the sun has a density exceeding the nuclear density, then a supermassive black hole with a mass of 10^9 solar masses (the existence of such black holes is suspected in quasars) has an average density of about 20 kg/m^3, which is 50 times less water density. Thus, in principle, a black hole can be obtained not only by compressing the existing volume of matter, but also by an "extensive" path, by accumulating a huge amount of material. And this is confidently described in scientific and popular articles. That is, no matter how you need compression to nuclear densities, do not need any cosmic horrors, collect enough material and it will become a black hole even with the density of our atmosphere and then it will endlessly absorb and absorb the surrounding stars. However, what really happens in such supermassive star objects will be described below.

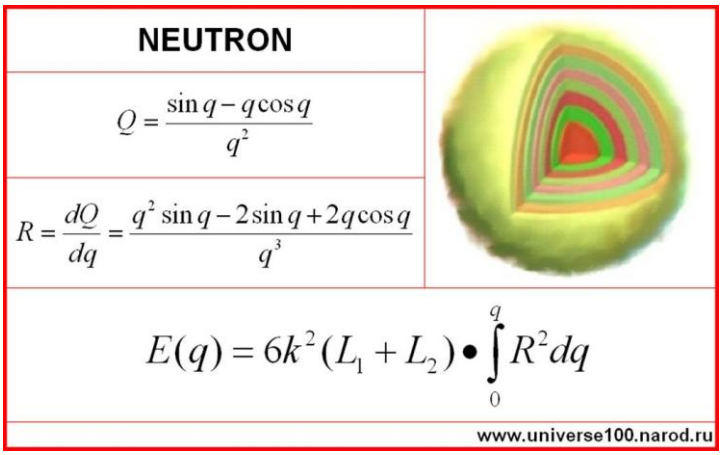
Are supernuclear densities possible?

- Established 14 years ago, proved mathematically, confirmed by coincidence with reality, that the universe is an elastic continuum (jelly). All mathematical calculations for 14 years as listed on the site: http://www.universe100.narod.ru .

The hypothesis of a jelly-like vacuum was expressed long ago, Einstein also mentioned it. However, no one could guess how tangible particles are embedded in this jelly. It turned out that the material particles (elementary particles) are localized wave vortices, which are described by strict mathematical formulas. It is the wave vortices (not the flows of matter, but the movement of waves in a stationary continuum) that run around the axis, while the universe continuum itself is stationary. This decision is given

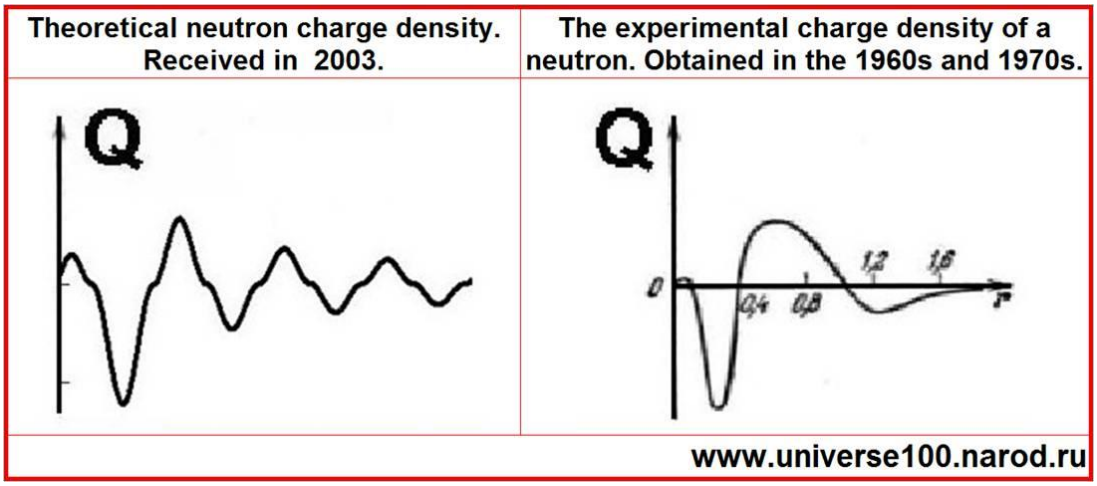
by strict mathematics. For example, the density of the universal continuum is found. It is not more than ~ 10^{-57} g/cm^3 (ten in minus fifty-seventh degree!). That is prohibitively small. And this is the upper limit, and the lower bound is zero. But this continuum is sufficiently elastic that elastic waves propagate in it with light speed. At least not even waves of deformations, but waves of stresses.

Here, for example, how does the formula for the internal arrangement of a neutron look like and its portrait:

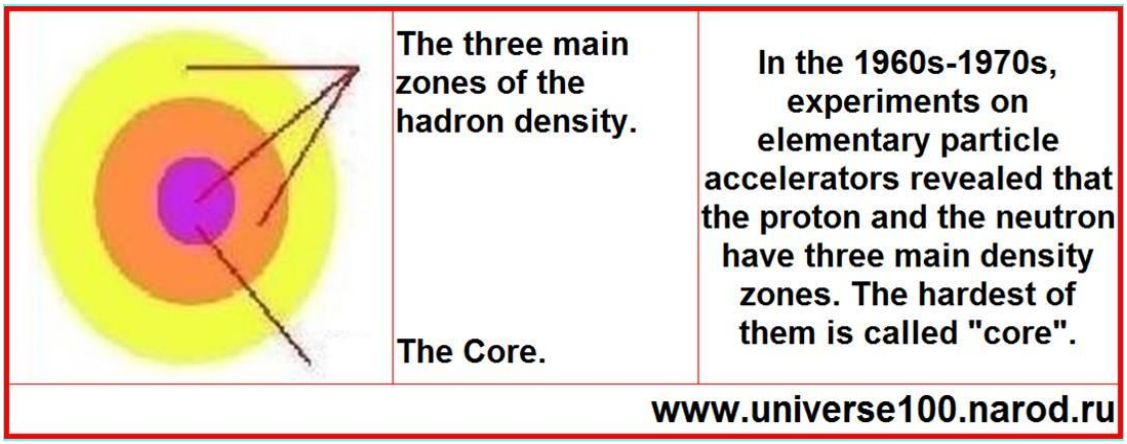


Here E is the energy density or that is the same mass density ($E=mc^2$) inside the neutron.

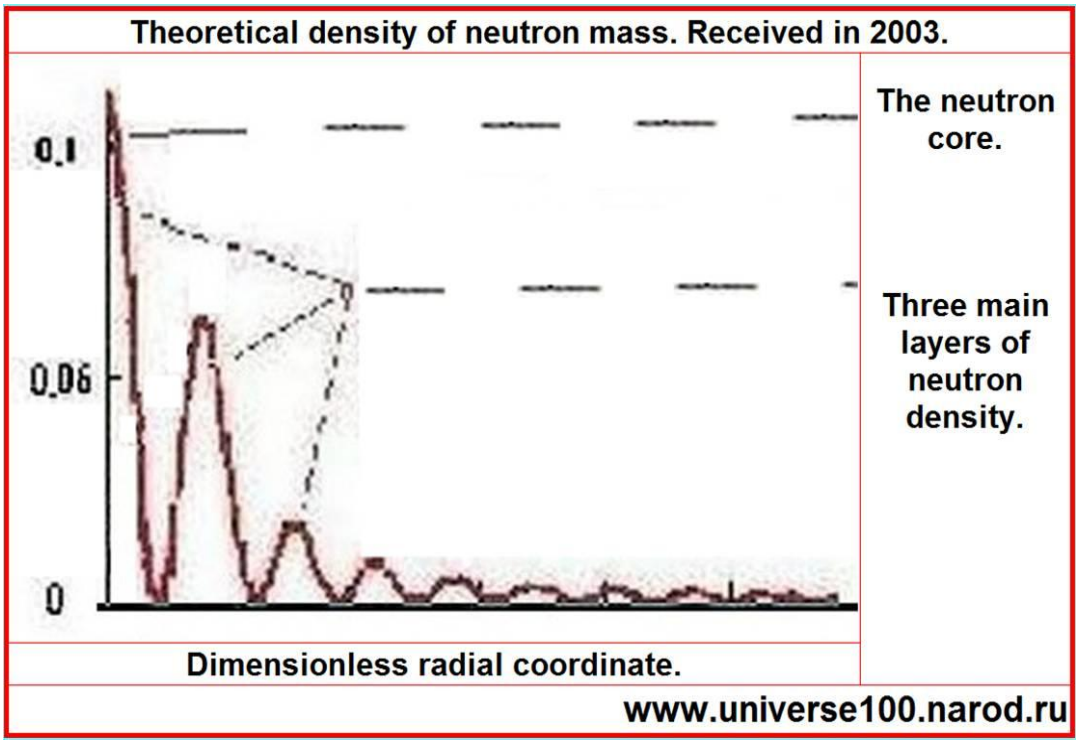
These formulas and the neutron portrait are confirmed with great accuracy by coincidence with the actual physical characteristics of the neutron. Here is an example of how a comparison of the theoretical and experimental charge distribution inside the neutron:



Or a comparison of the theoretical and experimental plot of the density distribution within the same neutron. Experiment:



But the theoretical density graph inside the neutron:

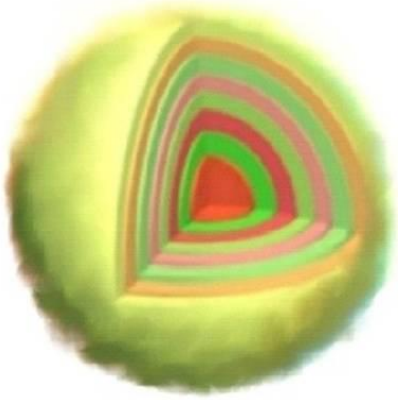


It seems that it was the existence of three layers of density in hadrons, along with some other circumstances, that indirectly led scientists to invent quarks (there are also three of them). The Hadrons are not divided into parts, the nuclear scientists in CERN are in vain tormented. Neither quarks nor Higgs bosons they will find and never receive, they do not exist.

The results for the proton are absolutely analogous. Outwardly, it is approximately the same as a neutron, spherically - layered. The electron has not yet been studied experimentally enough. But what is known, it completely coincides with our results. For those interested, portraits (with formulas) of a proton, an electron and a portrait of an atom of hydrogen. Note that the void inside the electron in size is just the size of the proton. Nature herself intended them for each other.

PROTON

$$Q = \frac{\sin q - q\cos q}{q^2}$$



$$R = \frac{dQ}{dq} = \frac{q^2 \sin q - 2\sin q + 2q\cos q}{q^3}$$

$$E(q,\theta) = \frac{3k^2(L_1 + L_2)}{4} \bullet$$

$$\bullet \int_0^q \int_0^\theta \sin\theta \frac{R^2 q^2 \sin^2\theta + Q^2(1+\cos^2\theta)}{q^2} d\theta dq$$

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ELECTRON

$$E(q) = 4k^2(L_1 + L_2) \bullet \int_0^q Q^2 dq$$

$$Q = \frac{\sin q - q\cos q}{q^2}$$

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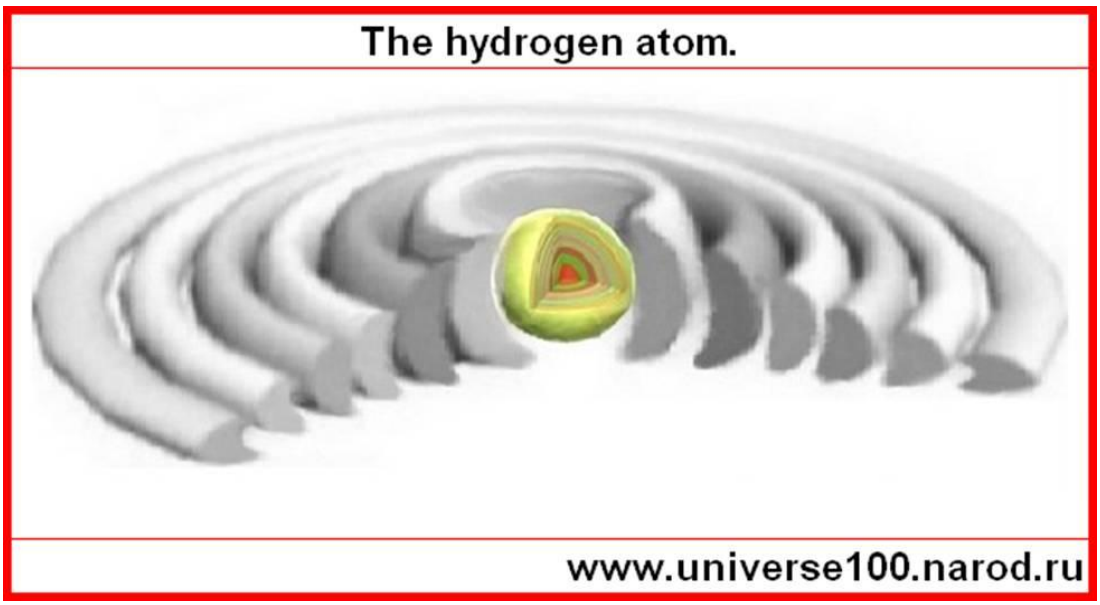


What really happens in superdense star objects?

Let us return to the device of elementary particles as wave vortices in an elastic continuum. Let us begin to compress a certain volume of such wave vortices (that is, elementary particles). Initially, these vortices interact according to the laws of "long-range action" known to us, they repel, preserving their internal structure. But after overcoming the nuclear density, these vortices simply can not exist. Their internal wave trajectories are so strongly interpenetrating and interacting that they begin to react mutually, the structure of elementary particles is destroyed, "cotton" occurs and these localized wave vortices seem to straighten out and fly away in the form of photons at the speed of light. All existing prohibitions on such interaction are overcome by the participation of third and fourth and more particles.

It's easy enough to imagine. Here are two wave vortices. While they are far away from each other, they repel, like ordinary particles. But it's enough to bring them closer, and that their axes of rotation are turned 180^0 degrees relative to each other, as they are mutually "destroyed." The law of conservation of energy is necessary, so the wave vortices are transformed into another kind of waves, ordinary, far-away electromagnetic waves, photons. All. Finish. Densities far exceeding the nuclear density simply can not be. Such densities are incompatible with the life of elementary particles. Once again: all existing prohibitions on such interaction are overcome by the participation of third and fourth and more particles.

All the huge and massive stellar objects on the path of turning into black holes can not achieve this goal. Because the substance inside them begins to actively transform into photons and leave the limits of these stellar objects. Candidates for black holes gradually evaporate, not reaching extreme densities.

Thus, when a large stellar mass begins to contract to form a black hole, the processes of converting neutron pairs into photons are accelerated. By the principle of matter-antimatter (opposite orientation). They are quietly flashed into an endless space. That's all. That is, there is almost the most widely known process of Hawking evaporation. With the difference that no "polarization" of the vacuum is to be invented for understanding, and no separation "one particle falls inside the black hole, and the other, which is just above the horizon, flies away, carrying energy" is also not needed. Both particles turn into photons and calmly fly away before the whole mass turns into a black hole.

Why extensive accumulation of mass is impossible.

The above formula for the average density of a black hole has no real meaning. Even if the average density of a massive stellar object is small, the center of such a massive star object is many orders of magnitude denser than the average density of this object. And it will start to burn out long before this object is formed. And this object will burn out before such a huge mass is gathered into a pile. Let's try to estimate what the pressure of water in the shaft, dug to the center of the Earth, will be. The potential $\varphi(h)$ inside a homogeneous sphere:

$$\varphi(h)=\frac{GM}{2R^3}(3R^2-h^2);$$

h - distance from the center of the Earth, M - Earth's mass, R - radius of the Earth. For an incompressible fluid:

$$grad(p)=-\rho \cdot grad(\varphi);$$

Solving with the condition $p(R)=0$, we obtain

$$p(h)=\varphi(h)+const;$$

$$p(h)=\frac{GM}{2R^3}(R^2-h^2);$$

Whence the water pressure at the very bottom of the shaft to the center of the Earth is equal to: (ρ=1000 kg/m^3).

$$p(0)=\rho \cdot G \cdot M/2R\ ;$$

$p(0)$=(1000 kg/m^3)•(6.7•10^{-11} $m^3s^{-2}kg^{-1}$)•(6.0•10^{24} kg)/(2•6.4•10^6m)= 30.000.000.000 (SI). It turns out about 3.000.000 atm. Despite the fact that gravity in the center of the Earth is zero.

Such a result was obtained under the assumption that the mine is filled with incompressible water. Well, what will happen in the bowels of supermassive stellar objects, if

a) The stars are many orders of magnitude greater than our Earth by mass.

b) The stars consist of a compressible plasma. This means that the matter of the stellar object will additionally flock to its center, which will again increase the density and pressure in the center many times. And thus accelerate the neutron burnout reaction.

However, in the supercompressed state of wave vortices, a variety of processes are possible, leading to the emission of photons into space.

Movable equilibrium in the universe.

Well, are there any reverse processes of collision of photons and their transformation again into elementary particles? - Probably yes. Definitely: yes. This is the universal mobile equilibrium. These photons will sooner or later successfully collide (again: perhaps with triple collisions, involving neutrinos and other particles, albeit rarely, no one in the universe and does not rush).

Thus, the equilibrium process between the number of photons and the number of neutrons in the entire universe is realized. It is only necessary to overaccumulate neutrons, as they begin to thicken around some centers in order to shrink into a black hole. But, alas, this is not to be. For they in the majority will burn down and will turn to photons. Which will be stupid to fly through the universe and again somewhere will collide, forming a pair of neutrons.

How are black holes supposedly formed?

According to modern astro-physical ideas, there are supposedly four scenarios for the formation of a black hole:

1. Gravitational collapse (catastrophic compression) of a rather massive star (more than 3.6 solar masses) at the final stage of its evolution.
2. Collapse of the central part of a galaxy or a right-galactic gas. Scientists place a huge (> 1000•M_S black hole at the center of many, if not all, spiral and elliptical galaxies.
3. Formation of black holes at the time of the Big Bang as a result of fluctuations in the gravitational field and / or matter. Such black holes are called primary holes.
4. The appearance of black holes in high-energy nuclear reactions is quantum black holes.

- **We argue that none of these scenarios are realized in the universe. This is the wild fantasy of the scientist of the "majority", which declared a ban on the existence of all alternative opinions.**

Some conclusions.

But if black holes are impossible, then so now the astronomers loved the primary explosion and was not? - Most likely, it never was. The universe is infinite in space and in time. And all the wonders are invented with the goal of somehow drawing physics to religious dogmas. But about this and other fascinating phenomena - in the following parts of our narrative.

Now it becomes clear why there are no global heterogeneities of the universe that could arise after the initial explosion. - Because all global condensations (stellar objects) quickly pass into the stage of transformation of dense sites into photons and fly through the universe, equalizing the density of matter at all its points. This is what it is, the universe. It does not have global density gradients in either direction. Well, photons have the ability sometimes to interact again and form a pair of neutrons. Thus, the balance and the cycle of matter in the universe are maintained.

For those interested. So the table of elementary particles is arranged - an analog of the periodic table. Only the first lines are shown. It contains an infinite number of lines, and with each row is expanded by one cell.

Table of elementary particles.			
j=0,m=0. **ELECTRON** weight ≈ 0,5 MeV. $E_{(0,0)}=\frac{1}{3}\pi k^2(L_1+L_2)$		It is infinite and expanding on one cell with each line.	
j=1,m=0. **NEUTRON** weight ≈ 939 MeV. $E_{(1,0)}=\frac{3}{5}\pi k^2(L_1+L_2)$	j=1,m=1. **PROTON** weight ≈ 938 MeV. $E_{(1,1)}=\frac{7}{30}\pi k^2(L_1+L_2)$		
j=2,m=0. **π-MESON.** weight ≈ 140 MeV. $E_{(2,0)}=\frac{220}{420}\pi k^2(L_1+L_2)$	j=2,m=1. **π-MESON.** weight ≈ 140 MeV. $E_{(2,1)}=\frac{46}{420}\pi k^2(L_1+L_2)$	j=2,m=2. **π-MESON.** weight ≈ 140 MeV. $E_{(2,2)}=\frac{31}{420}\pi k^2(L_1+L_2)$	
j=3,m=0. **η-MESON.** weight ≈ 550 MeV. $E_{(3,0)}=\frac{322}{630}\pi k^2(L_1+L_2)$	j=3,m=1. **K-MESON.** weight ≈ 500 MeV. $E_{(3,1)}=\frac{47}{630}\pi k^2(L_1+L_2)$	j=3,m=2. **K-MESON.** weight ≈ 500 MeV. $E_{(3,2)}=\frac{47}{630}\pi k^2(L_1+L_2)$	j=3,m=3. **K-MESON.** weight ≈ 500 MeV. $E_{(3,3)}=\frac{47}{630}\pi k^2(L_1+L_2)$

Comments.

Absorption of some enterprises by others occurs always when monopoly is resolved. For which antimonopoly committees have been established. Absorption occurred in science, when in 2004 it was announced around the world that all articles were reviewed. The majority absorbed the minority, privatized all scientific funding and declared themselves to be the heralds of truth. All that is different from the majority opinion was moderated. And what is a review? Is this confirmation of truth? - No. One random person, without delving into the heart of the matter, makes a decision. Can he judge the truth of the work ?! - Can not. - And what is it? - And this is the introduction of an administrative element into science by the whips who made their way to the heights of the scientific hierarchy along the administrative line and who have their own selfish interest.

The truth of scientific work should be established only after publication !!!

Even on the well-known website www.arxiv.org, which Perelman freely published in 2002, a review was introduced in 2004. In 2005, Perelman would not have been published there without a review. And who would give him a review, if so far few people can understand his evidence ?! After the publication, there was someone who confirmed the correctness.

And even in the Russian paid magazine, in which I freely, for my money, published all the results set out in 2003, when I brought in the next articles in 2005, I was shown the door. Like, go, carry a review. And who will give it?

Reviewing articles in paid magazines should be canceled.

Human life is short. And in science, this is particularly clear and painful. Old views resist for many years, decades. During this time, either the authors of the new one will die, or those who resist will die. In any case, dismantling and searching for the guilty will not do anything. They say they were wrong, they did not see it, and so on. Who remembers the stranglers of genetics and cybernetics? Remember only the heroes of science. They are usually recognized as posthumous. : ((((

Alas, all material goods, bonuses like "Global Energy", alas, have time to appropriate their enemies, obscurantists and obscurantists.

It is necessary to separate scientific administration once and for all from scientists. And never under any sauce they can not be confused.

The situation is such that priority work, the Nobel level in our country (Russia) has

nowhere to send. All logs are blocked for non-members. All Internet portals also do not allow the author to post the article himself, it is necessary to send, and there the moderators decide. And if the moderators received an order from above, then the article will naturally be rejected as "pseudoscientific". Morals remain the same as in the Middle Ages. Unless the terminology becomes more modern. There is no opening through which it would be possible to impregnate science with new ideas. Inventions - please, because there can be an economic effect, here the business is on the rise. But the discoveries, theories - no. Save on the committee on discoveries and sweep billions of dollars at the colliders? !!!

It is necessary to restore the committee on discoveries, which was in the USSR.

Let's take the stage artists. They compete among themselves, this is understandable. They take away from each other concert fees. They do not love each other. But someone heard from them a bad word about each other ?! - No. It is unacceptable. It's a code of honor. And they always smile at each other, admire each other, perform in joint concerts and praise each other. Yes, artists. Even traders in electric trains do not allow themselves to show hostility. And when the second car enters the car, it is waiting for the first one to finish his speech. Code of honor.

But is there a code of honor for physicists? - Alas, alas, and again, alas. Russian physicists brought up in Soviet times, the code of honor is completely absent. And this despite the fact that they themselves lie, lie and lie. They do not tolerate alternative science to the spirit. And they suppress it by all available means, taking away all means of subsistence from the violas.

It is necessary to create a low-paid scientific journal, paper, without any review, so that anyone can publish anything and that it is considered an official publication.

The society bit by bit collects our public knowledge and builds our social system of life. By bit! And if an inadvertent move occurs, or wrong knowledge is laid, then part of the public building collapses. Sometimes huge parts of a public building collapse. Which then need to restore years and decades. But our politicians and officials do not understand this at all. They are without any doubt beginning the silly reforms, the meaninglessness of which is clear even to unprepared people. Then comes the crisis in this or that area of social functioning. But no one is responsible for anything. But at least some preliminary examination, discussion of forthcoming reforms, it costs many times cheaper than the serious consequences of ill-conceived reforms. Take, for example, the costs of building colliders. Or here was the USSR, then someone needed to reform it - what came of it? How many trillions of capital has been exported? How many enterprises are destroyed? How many trillions of losses has Russia suffered?

It is necessary to create and have a state expert system. Which would necessarily take all the messages, all the information, from all fields of activity. And would give an opinion on all incoming proposals.

Used materials:

http://ru.wikipedia.org ,
http://www.kob-crimea.org ,
http://thoughts-about-life.ru .
http://vvkuz.ru/books/ch_15.pdf .
http://physics-animations.com/rusboard/themes/51280.html .

Опубликовано:
https://www.academia.edu/34719210/Why_there_are_no_black_holes._Deadlock_hypotheses_of_modern_physics

http://vixra.org/abs/1802.0121

27. World nuclear madness, or why all research on the structure of elementary particles is curtailed.

© Published (2012) in all scientific forums and removed from everywhere by moderators.

This is an open appeal of the author to President Putin on the state of Russian nuclear and thermonuclear science and the Russian Academy of Sciences.

Here is a photo of one page from Yavorsky's handbook - Detlaf, 1980 edition, p.475.

реакции (•) п. 8° процесс будет происходить по схеме:

$$^{0}_{0}\nu_{\mu} + {}^{1}_{0}n \to {}^{1}_{1}p + \mu^{-},$$

где μ^{-} — отрицательный мюон. Этим доказывается различие электронных и мезонных нейтрино (и антинейтрино).

§ VIII.2.6. Понятие о структуре нуклона

1°. *Под структурой нуклона* (и любой элементарной частицы) понимается ее протяженность в пространстве и строение. Структура любой элементарной частицы не может рассматриваться изолированно. Она связана со структурой и свойствами других частиц. Прямые эксперименты по изучению структуры проведены только для нуклонов *). Эффективными путями изучения структуры

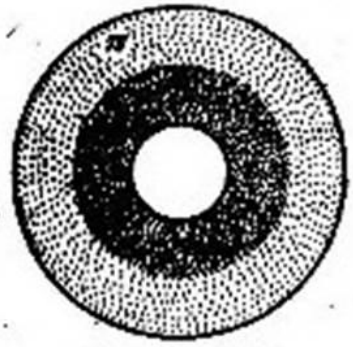


Рис. VIII.2.4.

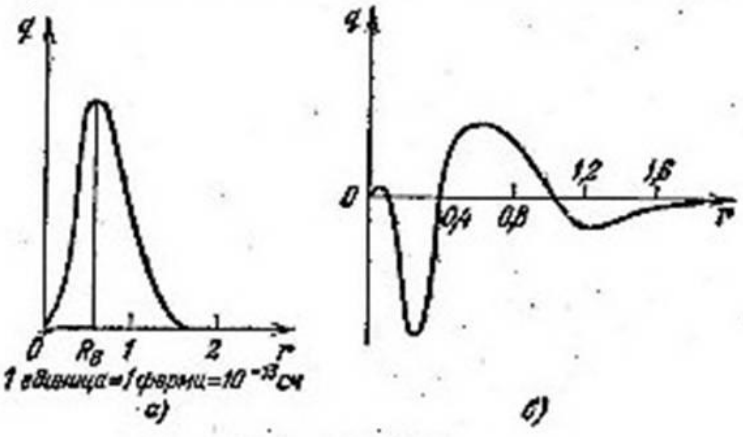


Рис. VIII.2.5.

нуклонов являются упругие столкновения пионов с протонами и упругие столкновения быстрых электронов с протонами и нейтронами. Первый метод показал, что пион незначительно отклоняется при столкновении от своего первоначального направления, а протон получает незначительную отдачу, так что переданный протону импульс Δp невелик. Из соотношения неопределенностей (VI.1.6.2°) следует, что процесс столкновения пиона с протоном происходит в некоторой области пространства с линейными размерами $a \geqslant \hbar/\Delta p$, где a характеризует размеры нуклона.

2°. В нуклоне непрерывно происходят процессы испускания и поглощения частиц и античастиц. Нуклон рассматривается как сложная, изменяющаяся во времени совокупность многих частиц.

В центральной части нуклона («голый нуклон») находится ядро («керн») нуклона с радиусом $(0{,}2 \div 0{,}4) \cdot 10^{-13}$ м. В этой области особая, еще не вполне ясная роль принадлежит тяжелым частицам — резонансам и парам нуклон — антинуклон. Внешнюю часть нуклона образует пионное облако (рис. VIII.2.4).

*) Проблема структуры элементарных частиц, а также попытки установить некоторые фундаментальные частицы, из которых построены все остальные, являются «передним краем» физики высоких энергий. В данной книге приводятся лишь самые общие сведения о структуре нуклона.

Fig.1. In the handbook there are clear graphs of the density distribution inside the nucleons, and on the subsequent pages of the handbook there are also graphs of the charge distribution inside the nucleons. These graphs make you think, to generate models for the device of elementary particles. But why think? Maybe just shake the apple tree harder?

All attempts to "google" and find something more fresh than this information 30 years ago have no success. All attempts to find something on this topic in other textbooks and reference books also have no result. Even from the same manual Yavorsky - Detlaf later editions, this chapter was withdrawn. All that is found in the network on the topic of the internal device of elementary particles, so this is only my own site

http://www.universe100.narod.ru

and my own articles and comments on the forums after 2005. Moreover, most of my articles and comments are either stuck, or driven to the farthest corners of forums such as "flood" or "sucks." And my comment on the article on the nuclear topic at the forum of the site kp.ru is simply cut off to a ridiculous appearance.

Along with this, the Internet is literally packed with gigabytes of information about bosons, gluons, and other short-lived objects. These objects have three hundred, and they write that the number of new particles is doubled with a period of 10 years since the 30-ies of the last century, when the first bit after the electron (1897) and the proton was discovered (1917) - when it opened neutron. That is, over 80 years of particles, there were 28 degrees, or 256 pieces. Approximately satisfied. And how many publications about the nonexistent Higgs boson, about the battle of scientists at the LHC, can not be expressed in words.

What is it? What does it mean?

Whom God wants to punish, he first deprives the mind.

The situation in modern nuclear physics is reminiscent of the following famous anecdote. In one experiment, monkeys show a highly hanging apple. She tries to jump - does not suffice. Trying to shake the apple tree - it does not work. Finally, the inner voice says to the monkey: think! The monkey thinks, thinks, then takes the nearby boxes, puts them on top of each other, climbs onto the received elevation and tears off the apple. A similar test is conducted with a Russian academician. He is given the task: to get a high hanging apple. The academician does not hesitate for a long time, starts to shake the apple tree. Does not work. He shakes the apple tree even more. Does not work. Finally, the inner voice says to the academician: think, think! - Ah, it's not a fig to think about here, it's necessary to shake! - Responds to the inner voice of the academician.

What is the analogy of this anecdote and the situation in nuclear research? - It is that tens of thousands of nuclear scientists all over the world and thousands in Russia including many decades shaking elementary particle accelerators and colliders. They shake every year more and more strongly, dispersing everything to high energies. Their fantasies (about the prospects of using the final result) are growing brighter, everything is more colorful. They even reward themselves with various awards for imaginary successes and achievements. But the result is not how it is. They do not open the secrets of matter to any. They promise: here, one more accelerator, even more energy of dispersal and we will achieve something that will open the secret of matter. But the new accelerator is built, launched, the work began to boil, but the result is not there again.

Meanwhile, the solution to the mystery of matter has already been proposed for nine (9) years to Russian scientists. Nine years, it's tens of billions of dollars in our country and hundreds of billions of dollars in the world, wasted, in search of what was found.

Found purely in theory. Published in a paid magazine for 9 years as, and more than 6 (six) years as hanging on the Internet on the famous site: http://www.universe100.narod.ru. But Russian academics are not willing to listen to what they suggest, they stubbornly shake and shake the matter, increase energy, and investing billions of budget dollars sawing and hopes that it will soon here from shaking goes wrong and right in the bull's-eye of the handle.

This apple will never fail. Here it is necessary to think, and not to shake. And then build a pyramid, but not from boxes, but from mathematical formulas. And only then can one climb on the heights of knowledge of the reality of the device of matter and elementary particles.

Modern nuclear scientists are trying to do without serious mathematics. They have a long time they mastered statistics. That is, like 50 years ago, working at the first synchrophasotrons, they dispersed and pushed the particles, and then photographed the trajectories of the fragments in the bubble chambers, staged statistics and logically treated those events that were imprinted on the film.

However, then, 50 years ago the most important result was achieved on synchrophasotrons. The distribution of density and charge inside nucleons was found (see Fig. 1). It was a breakthrough in the comprehension of the mystery of matter. It was a way to a new level of knowledge of the universe. But ... For unknown reasons, this line of research was hindered and stopped. And the information that was included in the textbooks, was later completely cut from everywhere. Why? Perhaps some fundamental contradictions began to appear. It is possible that there were difficulties in visualizing the device of nucleons. That is, how to imagine a proton in which the density is distributed unevenly ?! But most likely, it was the elimination of competitive directions for unpunished cutting of budget funds. Most likely it was an elementary adventurism. And all nuclear research went in a different way:

1) All particles were first declared pointlike, structureless. And which are certainly not non-point, it is still declared impossible to determine their internal structure.

2) All inconsistencies and new trajectories in bubble chambers were explained by the appearance of ever newer particles. Nuclear physics has followed the path of building up terminology. Steel as mushrooms after the rain to appear more and more new allegedly particles: leptons, gauge bosons, gluons, vector bosons, etc. etc. Even gravitons, but why be embarrassed?

Первое поколение
Электрон: e^-
Электронное нейтрино: ν_e
u-кварк «верхний»: u
d-кварк «нижний»: d
Второе поколение
Мюон: μ^-
Мюонное нейтрино: ν_μ
c-кварк «очарованный»: c
s-кварк «странный»: s
Третье поколение
Тау-лептон: τ^-
Тау-нейтрино: ν_τ
t-кварк «истинный»: t
b-кварк «прелестный»: b

Fig.2.

Первое поколение
Позитрон: e^+
Электронное антинейтрино: $\bar{\nu}_e$
u-антикварк: $\bar{u}$
d-антикварк: $\bar{d}$
Второе поколение
Положительный мюон: μ^+
Тау-антинейтрино: $\bar{\nu}_\mu$
c-антикварк: $\bar{c}$
s-антикварк: $\bar{s}$
Третье поколение
Положительный тау-лептон: τ^+
Тау-нейтрино: $\bar{\nu}_\tau$
t-антикварк: $\bar{t}$
b-антикварк: $\bar{b}$

Fig.3. Антиматерия.


Элементарные частицы
Фермионы
Кварки
u · d · c · s · t · b
Лептоны
e⁻ · e⁺ · μ⁻ · μ⁺ · τ⁻ · τ⁺ · νe · ν̄e · νμ · ν̄μ · ντ · ν̄τ
Бозоны
Калибровочные бозоны
γ · g · W-бозон · Z-бозон
Другие
Духи
Гипотетические
Супер-партнёры
Гейджино
Чарджино · Глюино · Гравитино · Нейтралино
Другие
Аксино · Хиггисино · Сфермион
Другие
A⁰ · Дилатон · G · H⁰ · J · Тахион · X · Y · W' · Z' · Стерильное нейтрино

Fig.4.


Составные частицы
Адроны
Барионы / Гипероны
Нуклоны (p · p̄ · n · n̄) · Δ · Λ · Σ · Ξ · Ω
Мезоны / Кварконии
π · ρ · η · η′ · φ · ω · J/ψ · ϒ · θ · K · B · D · T
Другие
Атомные ядра · Атомы · Экзотические атомы (Позитроний · Мюоний · Кварконий) · Молекулы
Гипотетические
Экзотические адроны
Экзотические барионы
Дибарион · Пентакварк
Экзотические мезоны
Глюбол · Тетракварк
Другие
Мезонная молекула · Померон

Fig.5.

Fig.6.

Fig.2 - 6. The main types of particles (only the main types) in modern views. :)))

3) This method of describing reality is quite related to the notorious heat. That is, we have introduced the term heat and everything, we do not need to think further. Body warmed up? - The warmth came. The body is cold? - Gone is the heat.

Or similarly, as now psychics are popular with all kinds of chakras, biofield, aura, soul, evil eye, spoilage, elemental, lower astrales, resonance in the aura, bioenergetics, astral parasites, aura ground, etheric body, karma, karma cleansing, karmic debts, essences , demons, demons, past life, astral body, etheric body, soul (spirit), bio-photons, energy "clots" - chakras, energy information field around a person, spiritual tissue, energy-information osmosis, use of cold plasma to protect and clean the biofield , and t .P. It is curious that the number of terms in psychics is already approaching the number of particles in nuclear physics.

However, only new terms can not completely solve nuclear problems. Therefore, it was decided to dismember the nucleons and introduce quarks. As if the nucleons consist of three different types of quarks.

4) Quarks and antiquarks have never been found in a free state - this is due to the phenomenon of confinement.

Hypotheses are advanced that these particles consist of more fundamental particles - preons.

5) But it was not possible to explain everything just with these terms. In particular, classes of particles moving with the speed of light, possessing energy, but not having a rest mass (photons, neutrinos) were discovered. And interactions were found in which particles that did not have a rest mass turned into particles having a rest mass. And then a mystery arose: how is this possible?

6) Without further ado, the nuclear scientists are introducing one more term: the Higgs boson. Well, as a heat. Since particles having a rest mass are transformed into particles that do not have a rest mass, it means that the soul flies out of them, which was called the Higgs boson. But it must be discovered somehow experimentally. How? - Well, it's clear how. It is necessary to build larger and larger colliders, linear accelerators and other accelerators, and to push and push and push particles. Perhaps something will glance over. That is, shake, shake and shake the apple tree.

All that is happening in our country is insanity. She was deprived of intelligence. Who did it? What for? Whose will does? - It's completely transparent. But why did God choose to punish us? What did the people sin? After all, in 1991 it was only 46 years since the end of the seemingly most terrible test that could exist for the people. Since the end of the terrible war, which claimed tens of millions of lives. What has Russia sinned over these 46 years?

The Cold War.

The only version that arises about the sins of Russia and the USSR is the Cold War. Somehow, imperceptibly, gradually, the USSR allowed itself to be drawn into the arms race, during the Cold War. And even put all mankind in jeopardy by its aggressive actions (the crisis of 1963). And since the intellectual potential of the NATO countries turned out to be deliberately and significantly higher, and the domestic policy in the USSR regarding their own intelligence was very ambiguous, gradually, gradually, the intellect of the USSR lost its entire patriotic spirit. Gradually, the intellect of the USSR, its top, began to lead from the west. It happened deep inside, secretive, conspiratorial. The whole top of the USSR was reborn and became a supporter of the West. Examples? - Yes, they are, there is no need to go far, they are standing on the Swamp.

But this is understandable. Because the ardent patriots of the USSR and later of Russia were hating the mind, hating their smart and talented people. The patriots of the USSR and Russia turned out to be in the majority of elementary rogues who are not capable of discoveries and scientific achievements. They just climbed and climbed up to the trough. Only they mourned and chammed, creating nothing. And then Gorbachev came ...

Particle accelerators in the USSR.

In 1956, the Soviet physicist Wexler published a paper in which the idea of a coherent, or collective, method of particle acceleration was put forward. But if published in 1956, then the work went on a dozen years earlier.

In 1957, the USSR (Dubna) launched the largest synchrophasotron for that time - 10 GeV. A few years later, synchrophasotrons with a strong focusing on 25-30 GeV were put into operation in Switzerland and the USA, and in 1967 in the USSR under Serpukhov a 76-GeV synchrophasotron, which for several years was the largest in the world. In 1972 a synchrophasotron was created in the USA for 200-400 GeV. In the USSR and the USA, accelerator designs are being developed for 1,000-5,000 GeV.

At the first synchrophasotrons, on-the-go, from the plaque, studies were made of the distribution of density and charge inside nucleons. Their graphics were published in textbooks and handbooks on physics.

But…

Annushka had already spilled the oil.
The adventurer Khrushchev has already come to power.
Velikhov has already become a doctor of physics and mathematics.
And in a few more years ...

The scientific elite of Russia.

Since ancient times, still Soviet times, even from the earliest Brezhnev times, the physical science of Russia is really headed by Academician Velikhov. He took off swiftly.

Graduation from the school (1952),
the end of Moscow State University (1958) -
work with plasma - Kurchatov Institute - graduated from graduate school (1961) - thesis of the candidate (1964) -
assignment immediately with the award of Academician LA Artsimovich's doctorate (1965). Passing the candidate's thesis. Passing the thesis at all. Well, what could be more important for the country than researching cold plasma ?!

In solving the problem of controlled thermonuclear fusion it was Velikhov who, back in 1967, Academician L.A. Artsimovich instructed to lead the development of the first long-term program of thermonuclear research in order to develop a thermonuclear reactor. Now such an ITER reactor was being built.

That is, Velikhov's take-off occurred in the Khrushchev era and the early post-

Khrushchev era. This era - the era of the heyday of adventurism and the beating of cybernetics and genetics, the era of Lysenkoism. Arrest, defamation and murder by Khrushchev's supporters, Lavrenty Beria, the chief defencist of the USSR, a comrade-in-arms of the great Stalin. One of those who forged a victory over Hitler and fascism. From this moment, the decomposition and fall of the USSR began.

In 1961, N.S. Khrushchev began the reorganization of the Academy of Sciences of the USSR, which caused serious damage to Soviet science (from publications).

Devouring Tokamaks.

In 1971, Velikhov was appointed deputy director of the Institute of Atomic Energy. Kurchatov on scientific work with the imposition on him of general scientific guidance and coordination of research in the field of plasma physics and controlled thermonuclear fusion. The decision about this appointment was made by Lev Andreevich Artsimovich. Just this year (!) The author of this article, being a student of the first year, went on an excursion to the Serpukhov accelerator. It was a dream. It was a song. These were the remains of nuclear science in the USSR.

In 1974, E.P. Velikhov is elected as a full member of the USSR Academy of Sciences. At 39, he became the youngest academician of the Soviet Union. In the same year, the author of this publication generates the hypothesis of the Elastic Universe, the greatest in its significance for the future of mankind, for thousands of years to come. But intuitively feels that it is impossible to stick out with this hypothesis. There, at the top - Velikhov. There everything is stolen, everything will be appropriated, the author can put ideas there as the 10th co-author, and maybe forget. There is a cold war with the States.

In 1975 (Velikhov) it became clear that in the field of thermonuclear fusion we are lagging behind the United States. Americans and Europeans have already created large thermonuclear installations. Tokamaks were built in Princeton, in Japan, in Germany.

At the 25th Congress, the decision on the Soviet program for the Tokamaks was already made by Velikhov. And what about them to the wood-shake, fundamental research! You need to shake the apple tree! At the congress, a decision was taken on the Soviet program for the Tokamaks, then a government decree was issued, laying down the entire domestic base for the creation of thermonuclear installations, which they managed to create before the perestroika, but did not have time to use it.

In 1975, under the leadership of E.P. Velikhov, the creation of a unique MHD generator with a capacity of more than 500 MW, a voltage of 3 kV, with a current of 200 kA for 10 seconds ("A terrible sight!" - later recalled EP Velikhov) is being completed.

In September 1985, E.P. Velikhov accompanied M.S. Gorbachev on a trip to Paris, where Gorbachev made an initiative for international cooperation on a thermonuclear program. That is, by the time Gorbachev was already zombified in terms of the prospects for thermonuclear projects.

As a result of long-term stakeholder talks, it was decided to start the development of the ITER (International Thermonuclear Experimental Reactor) project by specialists from countries that have the most experience in thermonuclear research: the USSR, the USA, the European Union (Euratom) and Japan, first conceptual (1987) -1990), and then the technical one (1992-2001). During this period, E.P. Velikhov was the head of the International Council of ITER.

The stumbling block was the site for ITER. Two countries - Japan and France - offered their sites and could not reconcile their interests with each other. At present, the agreement has finally been reached, and soon the joint ITER reactor in Cadarache, France, is to be launched jointly by forces of Russia, Japan, the United States, the EU, South Korea, China and India. P.S. It has already begun and is rapidly being funded. There is also a certain cut, as elsewhere in modern science. That Skolkovo, that Nano,

that the LHC, that Cadarache ...

Velikhov is rightfully proud of the ITER's revolutionary project. The latter promises to make a real breakthrough in science and energy. But there are many promises, but what happens in reality? Promises are the best way to cut, as well as good intentions. In reality there is a merciless strangulation of all living things, which is an alternative for ITER.

In 2006, a new international agreement on ITER was signed. The first meeting of the Board of Directors of the new ITER Organization was held in autumn 2007. The first president of the Board of Directors of the ITER project was the European Chris Lewelyn Smith. E.P. Velikhov took the post of vice-president. Russian scientists still hold strong positions on the Board of Directors.

In 1991, E.P. Velikhov made a rather unusual proposal on the background of Gaidar's economic realities: to create a firm "Rosshelf", which would unite producers of equipment and investors in the development of the Arctic shelf. Thanks to the perseverance of scientists, Rosshelf obtained licenses to develop fields. Thus, two goals were achieved at once: on the one hand, to leave jobs in nuclear shipbuilding (and this was again promised for about 200 thousand people!), On the other hand, to preserve the Arctic shelf for Russia. But this shelf is the main source of oil and gas in the new XXI century, not only for Russia, but also for Europe and parts of Asia.

In 1992, Academician E.P. Velikhov became president of the company Rosshelf, which received a key role in the development of the Shtokman gas condensate field in the Barents Sea. Under the leadership of E.P. Velikhova developed a large-scale program for the construction of offshore platforms for the oil and gas fields of the Arctic shelf at the head of the Russian nuclear submarine shipbuilding company PO Sevmash in the city of Severodvinsk.

28. Ode to infinity.

There is no more beautiful language than Gogol. Without literary talent, we try to imitate him in our presentation.

Do you know what a mathematical infinity is? No, you do not know what a mathematical infinity is! Consider an asphalt path that exits from the "minus infinity" and goes to "plus - infinity", having neither beginning nor end. Mentally we will go on a journey along this path, marking the starting point as "zero". We will count the steps and number them with integers. Each step is a new number. We get the image of the numerical axis, known to all mathematicians. The integers on this axis are just an infinite set. Next, we will come up with some intermediate goals that would bring us closer to infinity. We will mark (THOUGHT!), Sticking a twig to the ground on the roadside, any achievable goals, descriptions of which are found in our real life or similar, which can be described in words.

First, for example, (mentally!) We will reach a million, we will make a million steps. Approached the end of the numerical axis? - Unfortunately no. Because the finish is still an Infinite number of steps. Then make a million times in a million steps. Approached the end? - Not at all. Now we will make a million times a million times in a million steps and all this in a millionth degree! Approached? - And again, no. Because to the finish is still Infinity. Moving by any similar dashes, even the most heaped combinations of many millions and many "degrees in degree" and any other functions, we will not approach the goal ever. This is the logic of mathematics. A simple person can not get to infinity.

But a simple person can not just be so simple. He is persistent. He will see how much

time we may need. Maybe this side will come close? Let our speed be a million in a millionth power of steps per second. This is more the speed of light. Will we reach a million million in a year? - Alas, alas. We will not get to the finish line and by one percent. And we will never get to the starting point, as sometimes happens in modern theoretical astronomy, with its closed model of the universe, that's for sure.

Let's try to voice our travels to infinity. Mentally, we number all the letters of the Russian alphabet by numbers from 10 to 42, the space between words is 43, and punctuation marks will be denoted by numbers from 44 to 50. Let's add here the main letters and signs of foreign alphabets, numbering them with numbers from 51 to 99. Thus, if we dismember all the integers that occur are divided into pieces of two digits (for odd numbers, for simplicity, one digit is discarded), we get the opportunity to "voice" all the numbers we meet. So, for example, the number 14101410 will sound like "eider". It turns out that somewhere far away on this numerical axis there are many-valued numbers that represent the encoded novels of all known and forgotten writers. And also everything that will be written by any writers in the next thousand years! But these places will not be infinite, nor will they bring us closer to it. Moving on, we will meet these novels again and again, in any combination, two and three times and a million times a million times! And also we will meet all possible editorial and censorship edits of all these novels and novels in any quantity.

Unfortunately, here the imagination of the authors is exhausted. But the main idea is this: everything that we can honestly fantasize, not using Infinity itself (implicitly, secretly) or its mathematical designation (∞) - nothing and will never bring us to infinity.

But ... Mathematicians are not ordinary people! They are cunning, inventive. All mathematics - it's all tricks. The simple accumulation of knowledge here is unacceptable. And it turns out that there are mathematical tricks that easily deliver us to Infinity! They are purely speculative and physically unworkable. As, however, it is impracticable and most of what was mentioned above. But it is quite feasible mathematically. A simple example. We will move with variable speed, with acceleration, according to the following algorithm. In the first half of a second, we'll go one step. Then for the next "half of a second," we'll go one step further. Then for "half from half from half of second" one more step and so on. It is easy to calculate that in just one second (!) We reach infinity. That is, for a time equal to (1/2 + ¼ + 1/8 + ...) = 1 second, we will advance to 1 + 1 + 1 + 1 + 1 + ... steps, which in sum gives infinity.

On this example you need to think hard. After all, so in life, one lives honestly all their lives and everyone is waiting and waiting for them to be promoted. But it's all useless. And this is right and even fair. Because such honest - there is no place up there. Because then where to put the dishonest ?! Honest nature rejects any algorithms (such as you to me, I to you, to prepare and make an impression, to get a shortcut to truths, to get into graduate school, to defend myself, etc.). A cunning, born for high positions and positions, they use no shame absolutely all unpretentious but effective algorithms and very quickly find themselves on the very top of the service ladder. And already there they sit, rocking their legs and experiencing satisfaction. It only remains to add that at critical moments (the war, the economic crisis), all these cunning quickly fall down and high places are occupied by honest, capable of action. Of course, before the situation improves.

There is a funny and very unobvious example, when we will move on the same "halves of the halves" in time even reducing the mileage. On the first piece (half) moving on one second step, on the second piece (half from the half) by one third of the step, and so on. It turns out that (½ + 1/3 + ¼ + 1/5 + ...) also give Infinity in the sum. That is, the sequence (½ + 1/3 + ¼ + 1/5 + ...) turns out to be substantially more powerful than (1/2 + ¼ + 1/8 + ...). Even more powerful than (1 + 1/2 + ¼ + 1/8 + ...) or (2 + 1 + 1/2 + ¼ + 1/8 + ...) and the like. The analysis shows that in these examples we have reached

infinity, implicitly laying the infinity itself in the algorithm of motion. That is, in our case, dividing one second into an infinite number of pieces (1/2 + ¼ + 1/8 + 1/16 + ...).

We got acquainted while with the whole numbers. But you can consider all the real numbers on the numeric axis (with decimal places after the decimal point). Then all previous voiced collected works, all our grandiose travels are freely placed on the tiniest bit of the numerical axis. Even just in one physical number! It turns out that there is another, more powerful type of infinity, which is discussed below.

Apparently, there are infinitely many different kinds of mathematical infinities, differing in power. You just need to come up with an algorithm for creating them and prove that it is correct. And among all the infinities, a simple sequence of integers, which we were able to overcome only by cunning, is the least powerful. This was proved by mathematicians. Although it already contains all human knowledge (if you number the letters in the manner described above). This is the so-called ACCOUNT MANY. After him comes a more powerful set of real numbers (decimal fractions), or in the common people, an INCONSISTENT QUANTITY, or on scientific - CONTINUUM. Simplically speaking, the continuum is a countable set of countable sets, which already (also proved by clever people) is not countable. Even more powerful infinity can come up with. But to come up with such an infinity, which would stand between a countable set and a continuum, so far nobody has succeeded. How could not and prove the impossibility of this. Dare, young men! Try, for example, to construct (prompt the idea) a certain "logarithmic sequence" of "logarithmic sequences".

Well, let's say that the described examples of someone and are interested. But this is math, abstraction. But in fact, in reality is there an Infinity? Can I touch, see, feel? - Such an infinite set, and in addition, spatial, three-dimensional, is the universe. Look at the starry summer night in the sky and you will feel it and see. You will feel like a speck of space. You will see the Universal Continuum.

Furthermore. Infinity is present around us not only in the form of spatial infinite length. Our analysis shows that it, very possibly, exists in the form of our infinitesimal density. In the sense of an infinitesimal density of both the universal Gukum and, consequently, the density of oscillations of this Guk, if one may so express it. That is, the space is likely to be really empty, but at the same time it is ... resilient! And at the same time it allows us to exist in ourselves localized oscillations, and hence in our - elementary particles, Matter!

Sometimes, however, carried away by adjusting to a single standard, scientists (and again, mostly mathematicians) add Time to the universe, representing the universe as a four-dimensional space. But this is already too much. It's unnecessary for a simple person. Still, the space does not tick through every meter, and the clock ticks through every second. In time, you do not fly back and forth, but in space it's easy. Do not mix the long with the liquid or hot with the loud one.

There is an assumption that all mathematical science has some reflection in the universe. That is, any mathematical formula has a corresponding physical object or process in the universe! And if he has not yet, then a person can do it! And vice versa. Of course, not all of these matches have been found. To search for these correspondences is the task of the science of Physics. Mathematics develops to a greater extent in itself and to a lesser extent pushed by physics. But physics ... also develops more in itself, but in its experimental part, and to a lesser extent pushed by mathematics. Thus, mathematics and physics are like two sciences moving towards each other. Someday they will merge, and, perhaps, in an ecstatic ecstasy. It is not excluded that our theories are the beginning of this ecstasy, as if a prelude.

Let us return, however, to speculative experiments. If we mark a real number on the numerical interval and randomly throw a needle into this segment, then the probability that the needle will be stuck exactly in this number is theoretically zero. Nevertheless,

throwing a needle, we always get into any number every time, although for this number the probability was zero! For this very reason, and our Galaxy, and the Solar system and the Earth and our terrain at some instant and in some piece of space exist. And it was we, people, with our consciousness who were fortunate enough to be in this place and observe all the processes taking place here.

Many billions and quadrillion years ago, in the Universe, once again in an infinite series, there were some perturbations, super global cosmic fireworks and catastrophes, and now existed elementary particles. And already from these particles through the medium of atoms and molecules everything that surrounds us was formed. It is possible that the process of accumulation of elementary particles passed immeasurably longer than the time of the appearance of galaxies, stars and planets. Perhaps even that the process of formation of the atomic universe takes up the whole "minus-infinity" of its existence right up to the foreseeable past. That is, if we speculate backward all the cosmic processes, they will naturally go to the minus-infinity, and in any negative time we will find the present elementary particles and atoms, although their concentration may gradually decrease, by minus infinity, turning to zero. This is something to think about by scientists.

If, however, we speculate all the processes in plus-infinity in time, then perhaps we will still meet the birth of new atoms from the cosmic background, radio noise. That is, our time may not be completely stable. But 99% of all atoms have already arisen, galaxies have formed.

We, therefore, were happily born already when everything was formed. This is often the case with children who are born every time in a better country and with a better ruler, which is painted in a literal. Later this usually turns out to be untrue. However, it is still impossible for us to see what will happen to the atomic universe in the distant future, plus-infinity. It remains only to think deeply. Shrink to the point ?! Will it fly apart in different directions? Or maybe everything will fade and then the deathly darkness and the same silence? How sad ...

But in the foreseeable ten or two billion years (plus or minus five billion years) we will have fun! We'll still bounce! We will flood the neighbors from below and enter the neighbor from the top! Nothing has disappeared and will not disappear from the universe over the years. There are only movements and interconversion of substances. Nothing and will never appear again, except for the eternally existing material universe. And all this infinite variety of universal forms and their entire time sequence to a single atom and a single instant of time are mutually unambiguously mapped onto a rectangular four-dimensional coordinate system "x, y, z, t". And even on the one-dimensional axis of real numbers "from minus infinity to plus infinity," for example, to any four cuts. But this is not enough for anyone.

There are not the biggest stars or galaxies or black holes - there are always more. There are no largest empty volumes without stars, comets and asteroids - there are even more extended ones. You will never reach the end of the universe, moving in any direction.

Here is one Internet - a regular who writes. Take, for example, a neutron flying away to infinity. He has already ceased to interact with all the particles close to us. Its already, as it were, no. So is it there or not? - We answer: but from infinity, this neutron will be replaced by as many absolutely same neutrons. Nothing will change. And there is nothing to worry about.

And you will never return to the starting point, as some scientists say. But this is not a simple lie, but an implicit, forced demonstration of its impotence in their attempts to understand the structure of the universe. So often happens in science: when they can not solve the problem, then they begin to fantasize. Then these fabrications become completely harmless scientist's enemies, like the theory of a closed universe. This is not

even bad, because one of the next fantasies can stumble on the truth. Worse, when they start to just be irresponsible to invent, forgetting to say that this is only a fantasy. And it also happens that pursuing the material result (degrees, rank, authority), some scientists try to give their nonsense for profound scientific truths. This is absolutely no good at all. It's a shame, guys, doctors and candidates! And then, as with beggars it turns out. Go find the real one who needs it. One for a hundred real, the other high-paid professional liars. So with scientists. You come with the truth, and there they say: yes, here you are hiding hundreds, go to the differences of the present!

Our Galaxy and the period of time that we or all humanity, or even the whole terrestrial biosphere, is an infinitesimal part of the whole space and time of the Universe. Infinitely many times there have been and will arise galaxies, stars, life and civilizations. And many times they have died and will perish. There were and will be explosions of stars and collapses of star clusters with subsequent explosions.

What modern astronomers tell us, all these collapses, explosions, super dense states, super holes and some primary "fluctuations", most likely it was, but not as a global picture of the world. These are just local episodes in the endless history of the universe. All these cases were endlessly many times in different parts of the universe and many more times will be repeated. Tap your finger anywhere in your apartment - and here was once the epicenter of a global space disaster! And not one, but infinitely many! During all these disasters, these squeezes and subsequent explosions, the substance passes through all the stages outlined by science-like terms: both the "Planck era" and the "De Sitter era" and many other "eras". Maybe even the "era of the Marquis de Sade." Perhaps at a maximum compression some galactic cluster and is compressed to the size of one atom or even its core. Or maybe it's just that, just recently, just a hundred billion years ago, it's been released. But all these monstrously terrible stories should not make us fixate only on our scrap of Time and the Universe and declare it something special and in addition someone created. And even more so to think up God for an explanation of all that is happening.

Although, if we look at the last sentence, we, as authors, have done everything possible to preserve the ancient terminology. We found in the universe a place for both God and the triune essence. This place - in the abbreviation of the name Infinite Homogeneous Guk. This is God the Father. God son is Loki, matter. And God the Holy Spirit is Life, the secrets of which are revealed on our website.

Our life experience always encounters finite phenomena. The capacity of human brains is also limited. For this reason, scientists are constantly trying to represent the universe as a flawed, closed, not too long ago educated. All for the sake of human psychology. All these theories of the "closed space", when moving along a straight line you get to the starting point (on the reverse side) or the theory of the "primary fluctuation", when the whole universe was suddenly formed from the point, it is nothing more than attempts to place infinity in our very finite brains .

Sometimes a different path is chosen: the laws of all kinds of "relativity" are invented, which are not widely understood and confused by the brain. Even if the brains are made unnecessary, because these theories do not fit into them and exist as if by themselves. After all, there is an anecdote about the super-speed "by Einstein", when you can run very fast around the pillar and manage to do yourself a kick in the ass. These theories and laws, not according to the will of the authors, but, in the opinion of the people's leaders, serve to stupefy the people and ultimately to oppress it.

Be that as it may, but in one of the places of the infinite universe is our Galaxy, which appeared approximately 100 billion years ago from a gas-like cluster, it is now not clear from which side, from what places and after what catastrophes sailed. Yes, and what a difference! From the remnants of this sparse matter, after the formation of the massive core of the Galaxy, about 10 billion years ago our Sun appeared. Here, the planets and

our Earth rotate later, about 5 billion years ago from the remnants of the remnants after the formation of the Sun of that initial dust cloud. And then - Life, about which on our website. What was in our places or with our substance 101 and more billions of years ago we will never know, even if we invent a time machine. However, we are now wiser, and this worries us little. Because it can be reliably said that there was nothing special except what we see now in other Galaxies.

29. A little bit about God and the devil.

So, the hypothesis of the structure of the universe is stated. What next? And then we will develop this hypothesis.

Everything that exists and occurs on Earth and in the Universe can be explained and modeled by scientific means, without involving the model of God. Classics of materialism argue that religion and devilry arise every time when humanity is confronted with something mysterious and difficult to explain. The most full of devilry are such fields of science as the sciences of life, the human body. Such a pearl, as the "soul", firmly rooted in the human mind. Undoubtedly one positive side of religion: unable to explain something, a person "entrusts" this to God and postpones the explanation for tens and hundreds of years, and he is engaged in solving pressing problems. Faith in God helped mankind to survive and not go insane.

However, the model of God is not as harmless as it may seem from pseudoscientific disputes like:

- Did God create everything ?!
- And who created God? And what was before that?

And classical: can God create such a stone, which he himself can not lift?

We, like parrots, repeat the generally accepted wise phrases. And we believed in the veracity of this "paradox". And meanwhile, if you think about and imagine both processes: creating a stone and then raising it, then it is not difficult to find a way out of this situation. It is important only to introduce time into these processes. So. Suppose that God needs more time than the larger stone he creates. And suppose that God needs more time to raise an increasingly heavy stone. Then all questions disappear at once. God will raise any stone, only more time is needed to create this stone and the subsequent ascent. The question arises: when we believed in all this nonsense, how did we imagine these processes? - And in any way! Alas, alas. We just like ass assorted what someone once vyaknul. It seems that many if not all paradoxes are destroyed when they are closely examined. How all unsolvable social problems and crises are being destroyed. Everything is decided. But you can solve all the problems slowly in the quiet of the cabinets, or you can, like in American blockbusters, drive cars through the streets and shoot their submachine guns. Or as we do - from the tanks of the Government House. This all - the stories "From the life of fools." It's a pity that the smart ones are delayed in these skirmishes, because the world is small.

The problem is that God's model inevitably drags the Devil's model behind him. For in this world everything is so stupid that you begin to doubt, but why does God need all this? A lot can only be needed for the Devil.

At the same time, scientific understanding removes the entire emotional color of events and becomes accessible to all people.

There is a topic for discussion about "what was before, let's say, our universe, or what will happen to it in a distant future for many billions of years." Someone, with quite understandable goals, is trying to depict the beginning of the universe from a gigantic explosion. He finishes at

least a giant collapse. At the same time, God is often the initiator of both. The collapse is presented as punishment for our sins. Accordingly, a big explosion was once a gift from God.

From ancient times for all people there was always a border (for each person - its own!) Between what a person understands himself or in principle could understand if he had time and that his understanding is inaccessible and belongs to God. Originally the field of understanding was very narrow and God owned very much: fire; success on the hunt; the change of night and day; disease; dreams; sky and clouds, rain; and a lot more.

With the development of science and the development of the human brain, the area belonging to God was moved further and further, first beyond the terrestrial atmosphere, and then beyond the solar system. On Earth, there remained only a small area for the existence of God - it is the "soul" of man, the very concept of "life." But as will be established in later chapters, these concepts also receive a scientific explanation. After expounding the Theory of Gukum and Theory of Life, the boundary of understanding is moved infinitely far away both in space and time, and there, infinitely far in the endless past, there is a "God" who hardly at least somehow influences at least something in this world. But we must not forget about Christ, who must live in the heart of every person. This is a completely different topic.

Our life and civilization are far from being the only ones. There are infinitely many planets populated by living organisms and infinitely many intelligent civilizations. There are infinitely many civilizations that are smarter than us. But our concern that they will come and conquer us is more the result of cinematic propaganda, which pursues either commercial interest or is needed by someone for political purposes. And even if this happens, it is much more likely that these aliens will be left alive if we lead a righteous lifestyle. And if we are, as now, gnaw each other's throats, then how unreasonable animals all go to a leg or sausage products for newcomers.

Despite the brevity of the life we have given and the limitations of our minds, we can model quite a lot in our brain from the processes that are taking place around us. If the above universe is sufficient already above the above, a more approximate part of it can be investigated in more detail.

If to be expressed figuratively, all cumulative human knowledge has some kind of bizarre spatial form. Rare people have exactly the same form of brain as the cumulative knowledge. Rather, even such people do not exist at all, because the process of evolution of the brain is far behind the scientific progress. Most often, in general, the volume of the brain is much less than the volume of knowledge, and therefore the brains of people seem to be stretched on knowledge like a rubber glove on a large hand. It's not up to the shape of the brain, it's good to just stretch without tearing ...

But there are happy people who have "a small brain stem." And when their brains are wrapped around knowledge, this outgrowth will not be straightened, it will not disappear. As it would happen, if a normal person put on a six-fingered glove. And then the general knowledge can grow in this offshoot, the extra finger on the glove. So new knowledge and all subsequent brains are born - gloves will be stretched now and on this offshoot.

The indicator of the lack of research in this or that field of science can be the amount of devilry and pseudoscientists in this field. Where is most of this shit now?

- In astronomy. The soothsisters, magicians, fortunetellers, astrologers and other charlatans are rampaging there. Somewhere there, God hides, and all his surroundings, and also places all the souls of the deceased - the righteous. From the mutual "sextile" of Jupiter and Mars depends on your success in business, and if you were born under an unhappy combination of planets, then go straight to the cemetery.

"The abyss of devilry," the afterlife, "" soul, "" heaven, "and" hell, "" psychics, "" magicians, "etc. - this is the science of life.The reviving corpses in American cinema are also from the same The modern achievements in chemistry, physics, cybernetics and genetics, quantum physics and related sciences allow to completely remove the veil from most of the main mysteries of life, which was done on the previous pages of this narrative.

Human society in its composition is very diverse. Someone believes in God, and someone in

the Devil. Someone shoots, and someone watches movies with reviving corpses. In this society there lives a small percentage of people who adequately perceive and correctly understand this world, people well-read and educated, including scientists who do not believe in any rubbish, but believe only in knowledge. These are materialists. But there are difficult years, when there are no discoveries and the movement of knowledge is inhibited. There are difficult tasks that can not be solved. There are paradoxes that nobody can explain. Maybe time is such that all the brains are thrown at the development of computer programs, rockets and cybernetics. May the life of mankind become full, not to science. Maybe all smart people had to leave to earn money. And maybe the genocide has already worked ... Where are the Newtons? Where are the Darwins? And then, to fool the head, so that the curious ones are left behind with their shame for their ignorance, ambiguous hypotheses of the "big bang" and the subsequent scattering of the fragments are invented. Or in biology - the "hypothesis of panspermia" and the like. Well, for small problems you can connect and witchcraft.

But here, as wolves' ears protrude from under the sheep's skin, so do not such problems and phenomena as do not fit into any theory.

1. How old is the universe? Are there any other explanations for the redshift, explained by the flight after the "big bang". Well, somewhere there was an explosion, somewhere there is a red shift, but why introduce this phenomenon to the rank of the universal? Stronger than the cat is not a beast? Is it so true and global this continuously exaggerated crap? And before the explosion, it means nothing happened! Or there was a mysterious point, which for no apparent reason with a terrible force exploded. Here is a message from the Internet, Bakharev (bah1@mail.ru) - 22.02.2007 10:03: The red shift of the spectra of distant galaxies is a consequence of the energy loss of photons during the passage of cosmological distances through the structure of space. Let's add from ourselves: through the space background. And then there are no extensions or contractions of the universe.

Here is an approximate dialogue between a "venerable **Scientist**" who has 300 to 700 publications and a high-brow "popular **TV presenter**," for example, in one nightly educational television program.

TV presenter: Tell me please, should the universe have been formed long ago? How else? Everything has its end and its beginning.

Scientist: Really, must! Well, how else?

TV presenter: All right. Now the universe can not be formed from anything else? Our experience teaches us that nothing comes of nothing ...

Scientist: Indeed, nothing can arise from nothing!

TV presenter: At the same time, since the universe was formed, so before it was not?

Scientist: That's right, colleague! Before the global primary explosion of the universe was not. (Then slyly, in Lenin's way, smiling with a squint): But there was something, but my friend ?! After all, nothing can arise from nothing ?!

TV presenter: So we come to the conclusion that initially there was no universe, but there was something. Are there any such objects that exist and at the same time do not exist?

Scientist: (Again cunningly so, in Lenin's, smiling): Of course, sir, my friend! This phenomenon is known in mathematics: it's POINT-C! A point is like nothing, and at the same time something. A point is that it has no parts. A point is that part of which is already nothing. This is where this elusive border between "something" and "nothing" is located.

TV presenter: So at first there was a point ?! After all, it turns out that the point can be formed from nothing ?!

Scientist: (Slyly so, with a squint): Well, the point, probably, can!

TV presenter: And what, after all, there are points on the window panes, on tomatoes, meat, school notebooks ...

The scientist: (In Stalin's way, seriously, without squinting, but with prischachivaniem): Well, you correctly think! And then this point exploded! Can a point explode or can not? The

pomegranate of the revolutionary is small, and in fact, too, sometimes it will snap like a king's coach! And the point - it's nuclear, it's vigorous! She is hypertensive, she can billions, yes that billions, in sex-sex-stelliards times stronger than babakhnut!
Leading (Stunned by Stalin's charm): Indeed, now we and the viewers are all much clearer ...

Our comment. Similarly, the appearance of life could be explained: first a point, and then microbes, amoebae, and then scientists dolbo ... all sorts of things came up.

In general, this phenomenon is funny in this matter. All scientists, based on the knowledge accumulated by mankind, can not imagine a stable infinite and eternal Universe. How so? The universe must necessarily either fly apart, or collapse. And at the same time it is necessary to have a beginning, to emerge several billion years ago and necessarily to end in a few billion years. The other does not suggest any reflections and equations. Life experience - too, because in life everything is finite, unstable and necessarily one day it is created and later it collapses. Everything passes, and it will pass - the Bible tells us.

It is unclear what exploded and why? But this is always said profoundly. "Era Planck", "Era De Sitter" ... There is only one "Era of the Marquis de Sade". Say, not everything that happens in the world can be accommodated in the human brain. There are things incomprehensible, which can only be ascertained, which you just need to remember, memorize by heart, in which you only need to believe. What's easier: the point exploded, the universe was scattered and formed. "Ilimintarno"! "Apparently"! You do not agitate for us only for the Soviet power (or in our time - for democracy) !! Any point that is now flying around the room can explode and give rise to a new universe! At any time, a microscopic black hole can now just now pierce the whole globe and think what to do next. You Poal (Ie I understand) ?!

Yes, there in our village, too, such a miracle was: one cow farted, and the horns fell off ... And the bull began as a stallion, with apples, a pound!

2. Physical paradoxes, which led to the theory of Einstein. Is this the only explanation for them only by the theory of relativity? Until now, this theory of relativity is difficult to comprehend. Even Einstein himself said: since mathematics began to become a theory of relativity, I no longer understand it myself. Although it is supported by a certain part of the scholarly community, after all, his man opened ... And again everyone is shouting "Ilimintarno"! "Apparently"!

3. The global structure of the universe, established 25 years ago, looks like a soap foam, where the bubbles are billions of light emptiness, and the walls are filled with clusters of galaxies. Unfortunately, we are not remembered by the author of the publication in the journal "Nature" of the late Soviet period. It seems that, at first glance, galaxies should strive to "gather together". It is this that constantly and frightens us. Say, again, all shrink into the ku ... that is, to the point. Although we, Russians, have been in the pile for some time already.

4. The double, particle-wave nature of elementary particles. To this all somehow used to. There is a black and white color, hot-cold water, a short-long road ... What, there is nothing like this? But at least there are rubber-metal shock absorbers, chocolate-peanut snickers and chipboards!

5. These square roots. Perhaps an additional, implicit stimulus to the search for another model of the universe is some indigestibility of the formulas of Einstein's theory. Why should God so complicate the device of the world ?!

Of course, Einstein's merit is great. He realized that there is something wrong in this world, not the mechanistic behavior of material objects. But he preferred an explanation close to human psychology, pushing the incomprehensible moments into the mathematical jungle. Just as in ancient times Ptolemy made a complex system of revolution of the planets and the Sun around the Earth, close and understandable to people, but very complex mathematically, with sudden loops in the middle of the trajectory. So also to all known square roots in Einstein's theory are phenomena of the same order with Ptolemy's loops. Einstein took as a basis a very sweet heart of the philistine statement that the material bodies move in the void, without encountering

resistance. At the same time, they do not change the length during the movement, because they are in themselves material and absolute. And the experimentally observed change in length was easily explained by the fact that this change in length is only apparent, that it occurs only from the point of view of the external observer, and is explained by the differences in the course of the clock and so on. The square roots were obtained.

The authors propose another, simple and understandable theory, albeit very humiliating for the human psyche.

When one person explains something to another, the second person begins to understand only when he feels that the former ceases to believe in what he explains. This is our personal life experience and the law of Nature.

Another interesting fact is also interesting. The Universe is full of maths. And not just mathematicians, but amateurs pozhonglirovat tensors; abstract from reality; come up with a lot of obscure definitions; to invent to the already existing operators of type "Δ" or "▼" several more mathematical operators of the "curl" type and even more ridiculous; with ease to introduce into the theory new types and types of interaction fields and attribute to them completely unexpected properties; to abandon experimental physical laws; To draw behind the ears the results of contradictory experiments to their theory; do everything - everything - everything is relative, vague, meaningless; and most importantly - the rest of his life to fight for the popularization of his theory, despite disproving results. There are almost no physicists on the problem of the device of the universe. Maybe this is the reason for the phenomenon that Nobel denied mathematicians his prize? And they are now looking for material well-being in physics?

These mathematicians, distracted from reality, shake and shovel formulas, and after finding some new formula, they start to think out a meaning for it. If the graph goes to infinity, it means "Era Plank", "Era De Sitter". If in the minus-infinity, then "Black Hole" and the like. Especially in honor in the scientific journals loaders and carriers of tensors. Behind the authorities in the rewrapping of the formulas, the jugglers are more eager to sing along. And now the entire academic choir is dragging out:

We are not afraid of a black hole,
There will come the Planck Era and the era of Sitter!

Humanity is so arranged that all of its cumulative knowledge and all its skills, accumulated over the centuries, are distributed between library storages and individuals. Of course, people play the main role. Each person knows to the best of his interests and abilities both about things global (there are not many of them) and small ones (there are a lot of them). Between people there is a certain trust in the knowledge of others, as a result, sometimes phrases are not made by specialists in the field they are pronounced mechanically, without a deep understanding of their meaning. Once taken on faith, someone's theory may be wrong. Therefore, another the leadership of the authors to the case was the thesis that believe first and foremost, and then authority.

Scientists know that there are and from time to time new truths appear that shock with their novelty, depth and strength. Once upon a time there was a problem about dominoes that shocked me with my decision. She was told by a classmate, whom I still have to kick in the ass (this is the mores of FizTech). Someday I will return. Formulation of the problem. If you put the bones of the dominoes on top of each other, pushing the upper one in the same direction, then how far can this visor come out? On the whole bone? To two? - Decision. It turns out that it is infinitely far away! If the process is carried out "back to front", slipping under the already firmly lying, already complex and large visor another bone with a slight shift, extending this visor. The sum of these shifts is infinite, since it is formed from the logarithmic series ½ + 1/3 + ¼ + 1/5 ...

There is another, also infinite, solution with the construction of a column with the bulge sticking out more and pushing it from above with a high column of domino bones. But it's not interesting.

The authors offer a small "paradox". It is known that in the 20th generation, if you take it from the past, all the residents of the country are relatives. That is, already now all Russians are

relatives. A new consequence: we have children, three of them. Consequently, in 20 generations, in just 500 years, we will be great-great-20 times-grandfathers and grandmothers of all future Russians! Not weak? So are the Americans. So, in 500 years, all Americans will be able to look at their great-great (20 times) -free, frozen now in liquid nitrogen. And when it is thawed, he can come to visit any American family as a direct relative, a scumbag.

Argument to those who ask: why exactly did you open all this? - EY answers, she draws well. You see my face? Well see? Can you describe it in words? - You can. Now draw to make it look like ... Draw my face to become recognizable and there was no cartoon. Rarely who can, this is very difficult. And chatter about the face, what it is wide or oblong, courageous or beautiful, clever or open etc. - it's all possible. And many people are able to draw cartoons, although even this is not easy.

We express satisfaction that all our theories were born in our country, the country of Orthodoxy and Materialism, the country where all world religions converge in Russia. They could not have been born in the West, although rich, but false and idealistic. A full stomach science does not accept. They could not have been born in the East, in Asia, where science has an even more miserable existence than in Russia, in Russia.

But nothing lasts forever in this world.

31. A unified theory of all fields. The Aaronov-Bohm effect. The fourth field.

© Alexandr I Dubinyansky, Pavel Churlaev, Warren R Giordano, Michael J Bull.
2017.10.26.

This theory is the Nobel Prize. Truth is born in discussion (not in dispute, but in discussion, in conversation). Authors: Alexandr I Dubinyansky, Warren R Giordano, Guido Kinet, Michael J Bull, Pavel Churlyaev. (unfortunately, only three are admitted to the Nobel Prize, some will have to leave, but I hope the three remaining will collect 10% of their premiums for the fourth and fifth to get everyone equal).

Next, we strain the imagination a little, so as not to waste time on the drawings.

Foreword. According to theory Alexandr I Dubinyansky & Pavel Churlyaev, for the displacement vector $W(x,y,z)$ of space Gukuum the Helmholtz theorem is applicable. This means that the vector $W(x,y,z)$ can be decomposed into two vectors:

$$W = A + G$$

Where $A(x,y,z)$ – vector electromagnetic potential, and $G(x,y,z)$ is a quantity directly related to the stress of the gravitational field. Moreover, the vector potential $A(x,y,z)$ reflects the component of the displacement vector $W(x,y,z)$, for which $divA$=0. And the gravitational field satisfies condition $rotG$=0.

A task. The effect of Aaronov-Bohm is known. Something, not yet known, acts on an electron in areas where there is no electromagnetic field. How is this possible?! Until now, it was believed that the vector potential $A(x,y,z)$ is some abstract magnitude and has no real physical meaning. In the light of the Aharonov-Bohm effect, it is assumed that the vector potential

$A(x,y,z)$ has a physical meaning, but which one?

Decision. But the physical meaning of the vector potential $A(x,y,z)$ very simple. This is part of the displacement vector of the cosmic vacuum. And that part of the displacement vector $W(x,y,z)$, for which $divA$=0. As is known, the vector potential $A(x,y,z)$ of electromagnetic field has 3 dimensions. Not 1, not 2, but 3! This means that the vector function $A(x,y,z)$ can be decomposed into 3 mutually perpendicular directions. As is known, the magnitude of the electric field strength E and magnetic field H in an electromagnetic wave are always perpendicular to each other. Two vectors E and H lie in the same plane. This means that the three-dimensional function $A(x,y,z)$ It is impossible to decompose it in two vectors E and H. There will always remain an unused vector projection $A(x,y,z)$, on a direction perpendicular to the vectors E and H. Vectors E and H do not exhaust the whole vector $A(x,y,z)$. There is one more vector, one more characteristic, one more field, let's call it Dubinyansky field, and let's denote it by the letter $D(x,y,z)$. Which itself manifests itself in the Aaron-Bohm effect. Naturally, this is a component $D(x,y,z)$ of vector $A(x,y,z)$ and affects the behavior of particles.

Apparently, component $D(x,y,z)$ is present in all electromagnetic processes and phenomena. Simply, it is difficult to detect with the help of electromagnetic equipment. Because all electromagnetic equipment is configured only to detect an electromagnetic field.

It is very likely that it is the component $D(x,y,z)$ is present in such phenomena as spherical and dotted lightning.

Опубликовано:
https://www.academia.edu/34965616/A_unified_theory_of_all_fields._The_Aaronov-Bohm_effect._The_fourth_field

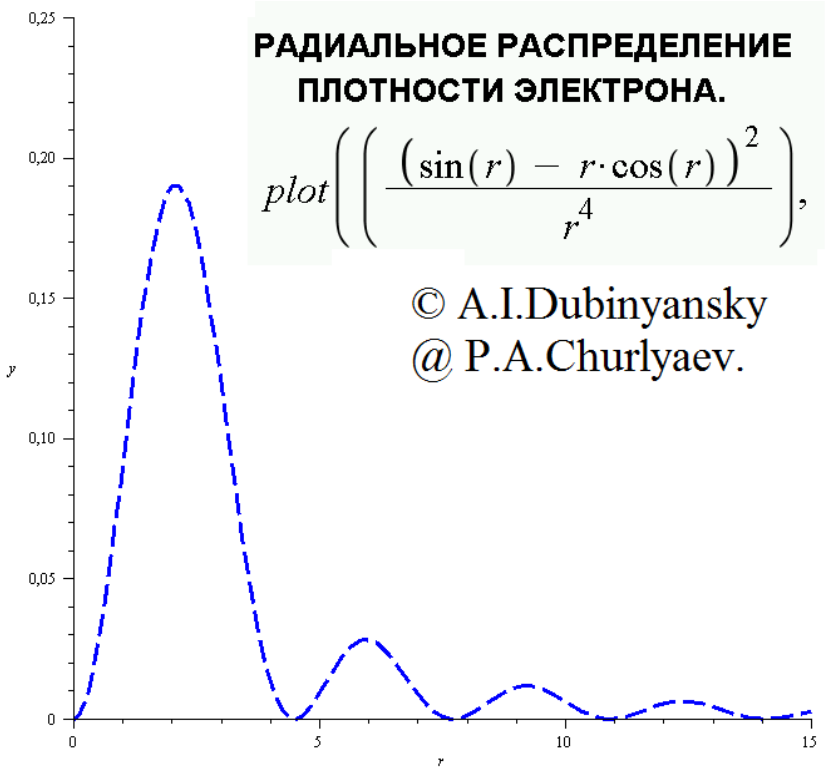
Обсуждение:
https://www.academia.edu/34965656/A_unified_theory_of_all_fields._The_Aaronov-Bohm_effect._The_fourth_field

32. GIF-PORTRAIT OF THE ELECTRON.

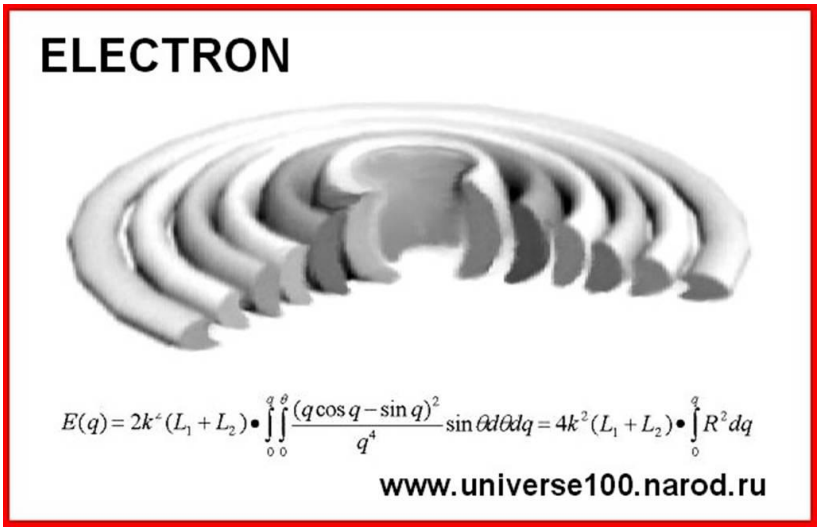
The internal distribution of density = energy in an electron.

Abstract. The model of the elastic continuum = Gukuum and in it localized wave vortices is used. The solutions of the wave equation have a discrete spectrum. Identification of the first solution $i, j = (0,0)$ as an electron was carried out. Taking into account the superposition of the wave on itself, a distribution of the energy density inside the electron.

Here is a graph of the radial distribution of the electron density.



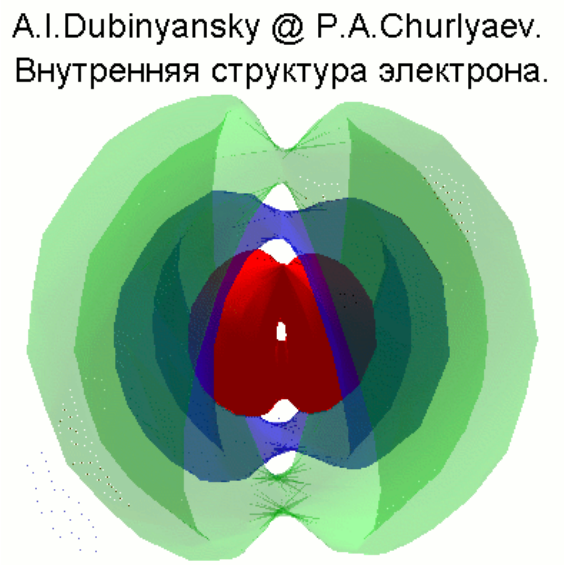
Here is an old, approximate figure of an electron. We can say that this is a sketch of an electron.



Here q, θ, φ – spherical coordinates. In the first approximation, the object is axisymmetric, therefore the integral is taken over φ. q is the radial coordinate. L_1,L_2 , k - some constants. Interested persons can check on the computer.

But the updated GIF-portrait of an electron, calculated on a computer. The current reference to this GIF-drawing, in motion, is given in the commentary. And the text link here:

http://universe100.narod.ru/250/image003.gif or https://i.yapx.ru/gERU.gif



Explanation of the figure. The electron consists of an infinite number of wave layers running around the vertical axis Z. At the very center of the electron, on the Z axis, the wave energy is zero. Then comes the most energetic wave layer (red), then the less energetic (blue) and the third layer (green). These three layers occupy about 90% of the total energy = the electron mass. The energy in them is distributed in a ratio of approximately 6: 3: 1. The mathematical solution is such that the energy is maximal in the middle of the layer and decreases to zero between the layers, and the direction of the wave on the surface between the layers changes the direction of motion to the opposite.

Thus, on the basis of the new GIF-pattern of an electron, the following phenomena become clear:

1) The formation of a hydrogen atom becomes understandable. The proton has dimensions tens of times smaller than the electron. It can easily penetrate into the "empty" center of the electron and take a stable position there. This is the hydrogen atom.

2) The formation of the atom of "positronium" becomes understandable. The positron is the same electron, but oriented "forehead" to another electron. When they approach each other at a certain speed, a small energy barrier is overcome and a stable position is achieved: "two coalesced electrons" = "positronium".

3) It becomes clear "annihilation" of the electron and the "positron". With a slightly higher energy than the energy necessary for the formation of positronium, two electrons can completely enter each other, with oppositely twirled waves. Such waves are converted into ordinary linearly moving waves, that is, a pair of photons that fly apart.
4) It becomes clear the occurrence of the electron spin. The sum of the angular momenta of all

the wave layers of the electron is not zero. There is some total angular momentum, this is the spin. The mysterious coincidence of the spin of an electron and the spin of a proton causes math. The solution for the electron $i, j = (0,0)$ and the solution for the proton $i, j = (1,1)$ have total angular moments equal to each other and opposite in sign. And the total angular momentum of the neutron $i, j = (1,0)$ turns out to be zero. The neutron and proton will be presented in GIF-portraits in a few weeks.

Опубликовано: https://www.academia.edu/35270271/GIF-_portrait_of_an_electron

Обсуждение: https://www.academia.edu/35270294/GIF-_portrait_of_an_electron

33. GIF-portrait of a neutron.

Internal density distribution in the neutron.

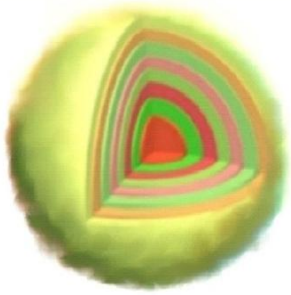
Abstract. The model of an elastic continuum and localized wave vortices is used. The solutions of the wave equation have a discrete spectrum. Identification of the second solution i, j = (1,0) as a neutron was carried out. Taking into account the superposition of the wave on itself, the energy density distribution inside the neutron is obtained.
Here is the graph of the radial distribution of neutron density.

Here is an old, approximate figure of a neutron. You can say a sketch of a neutron.

NEUTRON

$$Q = \frac{\sin q - q\cos q}{q^2}$$

$$R = \frac{dQ}{dq} = \frac{q^2 \sin q - 2\sin q + 2q\cos q}{q^3}$$

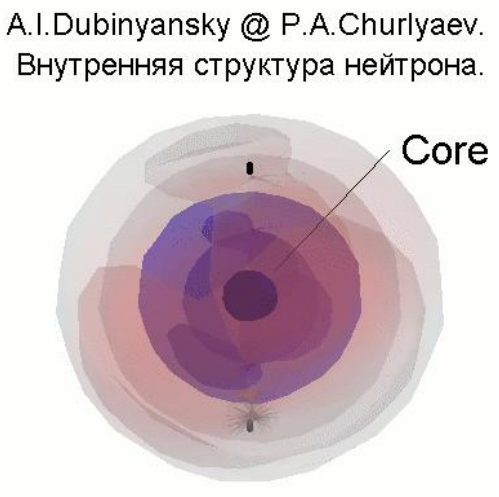


$$E(q) = 6k^2(L_1 + L_2) \bullet \int_0^q R^2 dq$$

www.universe100.narod.ru

Here q, θ, φ – spherical coordinates. In the first approximation, the object is axisymmetric, therefore the integral is taken over φ. q is the radial coordinate. L_1,L_2 , k - some constants. Interested persons can check on the computer.

But the updated GIF-portrait of an neutron, calculated on a computer. The current reference to this GIF-drawing, in motion, is given in the commentary. And the text link here: http://universe100.narod.ru/260/image003.gif or https://i.yapx.ru/gw8k.gif .



Explanation of the figure. A neutron, like an electron, consists of an infinite number of wave layers running around the vertical Z axis. At the very center of the neutron (the dark ball), on the Z axis, the wave energy reaches a maximum, this is the neutron CERN. In contrast to the electron, where in the center the energy is zero. Then follows the second energy wave layer (violet), and then even less energetic

(gray). These three layers occupy approximately 90% of the total energy = the neutron mass. The energy in them is distributed in a ratio of approximately 6: 4: 1. The mathematical solution is such that the energy is maximal in the middle of the layer and decreases to zero between the layers, and the direction of the wave on the surface between the layers changes the direction of motion to the opposite.

Thus, on the basis of the new GIF-figure of the neutron, the following phenomena become clear:

1) The nature and nature of the core become clear. This is an energy seal in the center of the object, which gives a mathematical solution *(1.0)*.

2) The zero neutron spin becomes clear. Despite the fact that each layer of the object has a decent angular momentum, in sum they give a value close to zero. This is mathematics.

3) The physics of neutron stars becomes understandable. The substance can be compressed to the size of a neutron core. Further it is impossible to squeeze. This is the limit. And at these compression levels, there is an annihilation of protons oriented "forehead", converting them into a pair of photons and flashing into space.

4) There are no black holes. This is an idle invention of mathematicians. Compression of matter is denser than that of neutron stars is not possible.

Опубликовано: https://www.academia.edu/35363224/GIF_portrait_of_a_neutron

Обсуждение: https://www.academia.edu/35341279/GIF_portrait_of_a_neutron

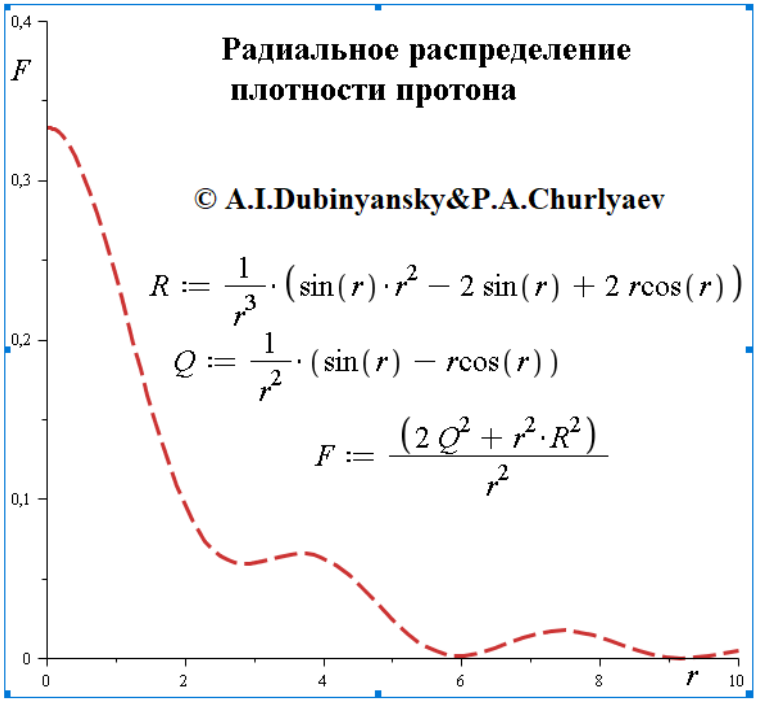
34. GIF-portrait of a proton.

Internal density distribution and dynamics of motion of the wave layers in the proton.

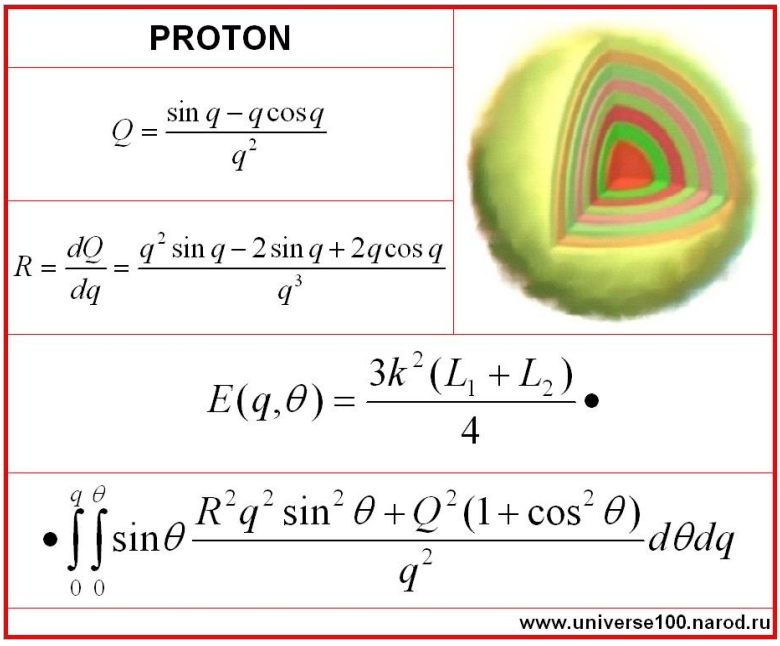
Abstract. The model of an elastic continuum and elementary particles in it as localized wave vortices is used. The solutions of the wave equation have a discrete spectrum. Identification of the third solution $i,j=(1,1)$ as a proton. Taking into account the superposition of the wave on itself, the energy density distribution inside the neutron is obtained. And a picture of the motion of the wave layers is obtained. Since gif-drawings can not be placed on this site, there are links to the hosting where these pictures are located. http://i.yapx.ru/oInv.gif и http://universe100.narod.ru/440/Proton-7.gif .

At once. Since gif-drawings can not be placed on this site, there are links to the hosting where these pictures are located. http://i.yapx.ru/oInv.gif & http://universe100.narod.ru/440/Proton-7.gif.

Graph of radial distribution of proton density.

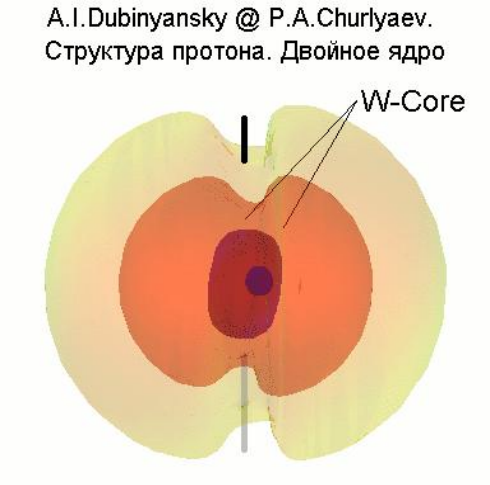


Here is an old, approximate figure of a proton. You can say a proton sketch.



Here q, θ, φ – spherical coordinates. The object is not axisymmetric, so by φ there is already taken the integral. q – radial coordinate. L_1 & L_2 – parameters of the gukuum, k is some constant. Those who wish can check.

But the updated portrait, calculated on the computer. This is one layer from the gif-portrait of the proton, a full portrait in the dynamics can be viewed by the links above.



Explanation of the GIF-figure. The proton, like the electron and the neutron, consists of an infinite number of wave layers running around the vertical axis Z. In the very center of the proton is a double core of the proton (in the figure as a dark object with a small black ball). In the core, the density of wave energy reaches a maximum. In contrast to the electron, where in the center the energy is zero. And unlike the neutron, in which the nucleus has a single core, in the proton the nucleus consists of two seals and is slightly non-axisymmetric. Then follows the second energy wave layer (red), and then even less energetic (yellow). These four layers occupy approximately 90% of the total energy = the mass of the proton. The total energy in them is distributed in a ratio of approximately ≈ 4: 4: 2: 1. The mathematical solution is such that the energy is maximal in the middle of the layer and decreases to zero between the layers, and the direction of the wave on the surface between the layers changes the direction of motion to the opposite. Concerning the motion of the two core seals, there is no certainty yet. How they move, one by one, or half-way to one another.

Thus, on the basis of the new GIF-pattern of the proton, the following phenomena become clear:

1) This gif-figure illustrates the previously determined theoretically axial asymmetry of the proton.

2) This figure illustrates the generality of the structure of a neutron and a proton. Especially at a distance from the center. But in the very center there are significant differences, leading to the fact that the charges and spins of the neutron and proton are significantly different.

Опубликовано: https://www.academia.edu/35509824/GIF-portrait_of_a_proton

Обсуждение: https://www.academia.edu/35501720/GIF-portrait_of_a_proton

35. Delusional ideas of modern physics.

Опубликовано:
https://www.academia.edu/34900093/Delusional_ideas_of_modern_physics

Here is a list of some crazy ideas.

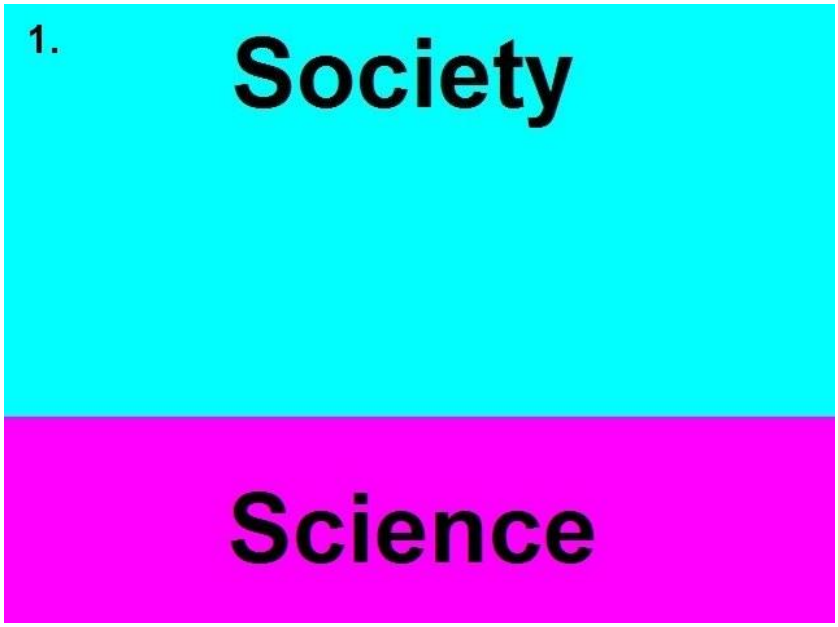
- The idea of the Big Bang.

- The idea of the absence of an absolute frame of reference.
- The idea of pointless structureless elementary particles.
- The idea of antimatter.
- The idea of black holes.
- The idea of exchange interaction.
- The idea of strings, superstrings and branes.
- The idea of quarks.
- The idea of the Higgs boson.

As you can see, most ideas were born very recently. In fact, this list is several times longer. We took only the most popular ones.

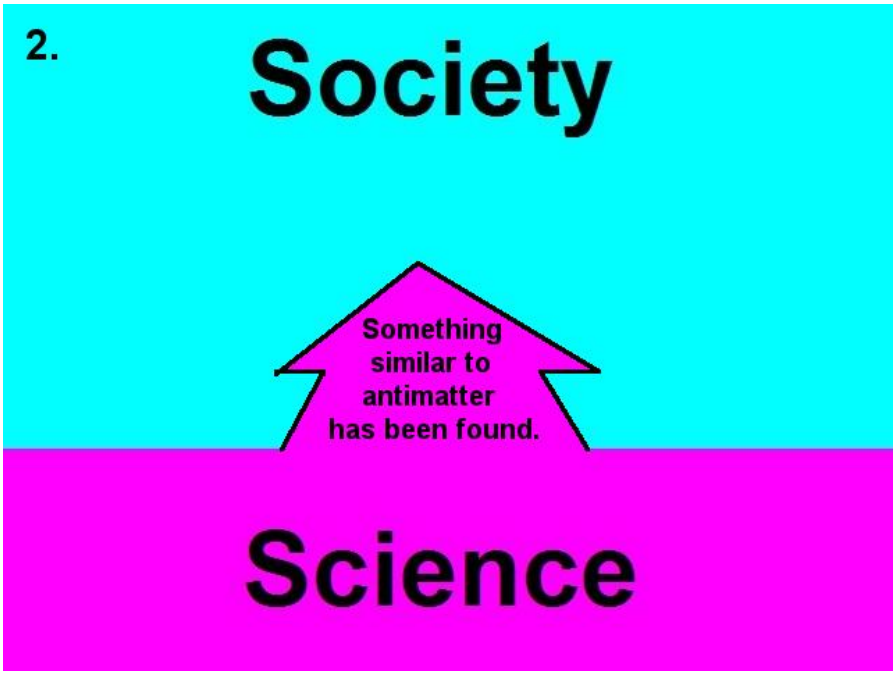
How delirious ideas are born.

We show this by the example of the birth of the idea of antimatter. The illustration consists of 5 figures. So, there is a society and there is a science. They live their own lives. The society is engaged in satisfying vital needs, entertainment, reproduction of the population and the upbringing of the younger generation. Science is searching for the laws of nature.

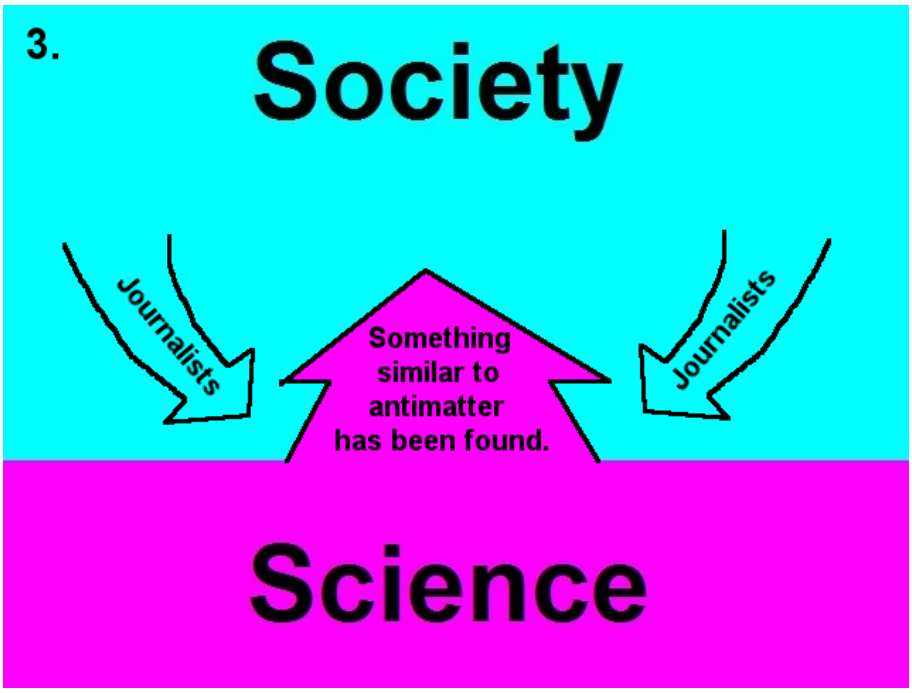


Suppose that one of the scientists discovered a new phenomenon. He does not yet fully understand the mechanism of this phenomenon. He still can not realize all the consequences of this discovery. For example, a scientist discovered the process of "annihilation", when a photon is observed in the cloud chamber. He begins to study the process of producing photons and finds that a photon is produced as a result of a collision of an electron with an unknown particle that has flown from space. The scientist makes information throwing (Fig. 2), directed mainly to scientists. "Particles arriving from space are found that, when colliding with electrons, behave like a" plus "connection with a" minus "in the electrical network. That is, there is some energy release, annihilation, a small explosion. The electron and cosmic particle disappear, and

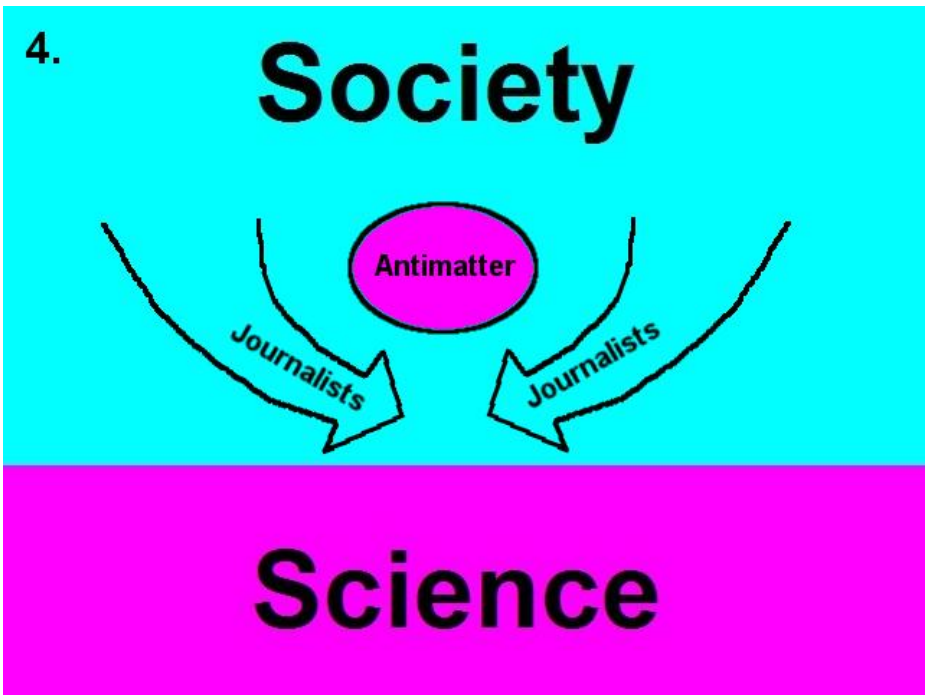
two photons are born. By the ability to annihilate, new particles resemble "antimatter". This is only a superficial hypothesis. "



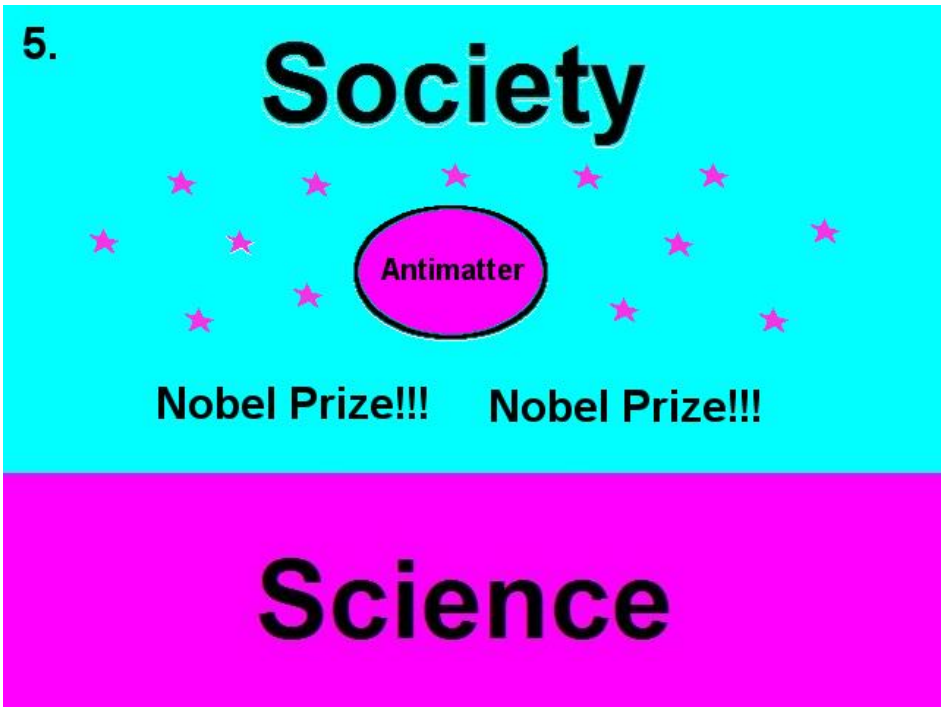
This hypothesis is picked up by journalists who write about science. The society wants sensations. And journalists give them these sensations. An avalanche of journalistic fabrications begins. If we compare it to the maps of military operations drawn by military generals, then a blow from the flanks to the advancing offensive of science takes place. The blows from the flanks surround the detached group of science, and cut it off from the basic science.



Further, the already surrounded groupings are completely transferred to the command of journalists. They do what they want with this information. Sensation! Antimatter found! This is the same matter, only with a minus sign! When a matter meets an antimatter, an explosion of enormous strength takes place, and everything turns into photons! In space, there are whole galaxies out of antimatter! Possible bombs of antimatter! New types of weapons! One writer urgently writes a novel about the love of a beautiful earthly girl to an equally handsome alien, but consisting of antimatter. Ladies cry when they read a novel. The novel is awarded a literary prize. A feature film is being shot, and then a series on the topic of romantic relations with aliens from antimatter. In the film, there are many thermonuclear explosions in love hearts, chases and shooting bullets from antimatter. Society likes this idea. Society accepts the idea. An anti-electron is given a beautiful name: a positron. This name becomes the most popular for newborn babies.



Inspired by the approval of society, scientists quickly write "theory of antimatter", they enter it into the list of elementary particles. The number of elementary particles is immediately doubled. Antimatter is "tied" to all sections of physics. They contribute to all textbooks. Find the masses, charges and spins of the positron, antiproton and antineutron. Fortunately, it's not difficult to do, just attribute a minus sign. The number of scientific articles "substantiating" the existence of antimatter increases many times. Scientists of all countries support the idea of antimatter. The financing of antimatter research is increasing many times. The number of dissertations devoted to antimatter and scientific degrees also increases many times. As from the cornucopia of astronomers confirm that here and there are found stars, by all indications similar to stars from antimatter. And here's the logical result: with universal ecstasy and approval, the author of the opening is awarded a Nobel Prize!



But in fact, there was no evidence of the existence of antimatter as it was not. Only the simplest observations in the cloud chamber are valid. And only with the electron. All the rest is fudge. Worse than that. Long-term searches for anti-galaxies lead nowhere. There are no anti-galaxies. There are attempts to come up with the origin of such an inequality of matter and antimatter. Begins pseudoscientific verbal gymnastics. Type: in the first $0.1 \cdot 10^{-57}$ seconds after the Big Bang, there was a random fluctuation in the direction of ordinary matter, which then left an imprint on the entire subsequent history of the universe. Is not it funny?

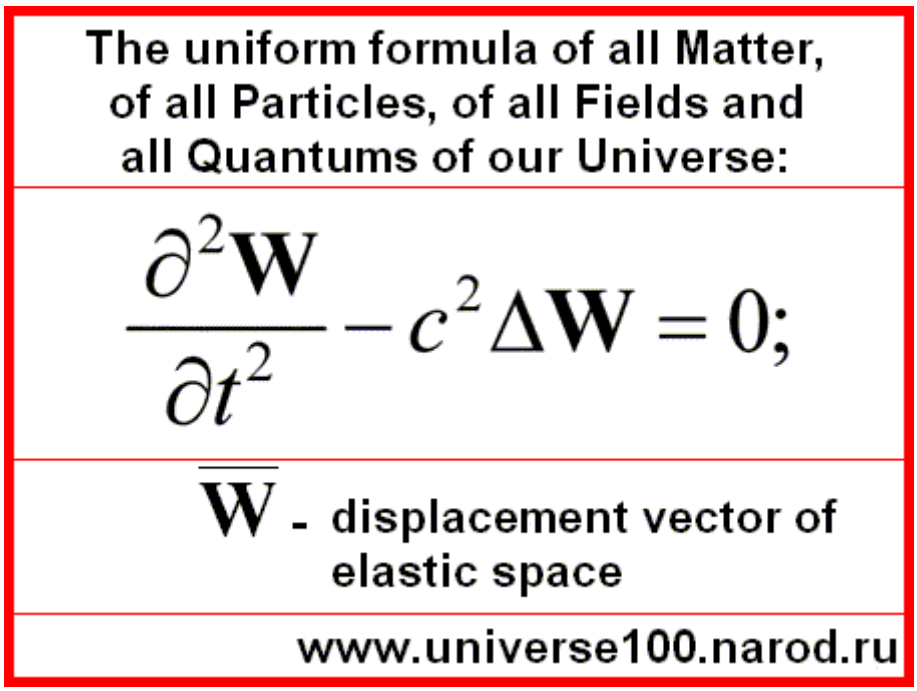
The plot described here with the birth of antimatter occurred with all the phenomena listed at the beginning of the article. Perhaps with some variations. And terrible as it may be, all modern astrophysics, elementary particle physics, electromagnetism and gravitation physics are built of defective concrete blocks and on unsteady ground. The building of physics creaks under the gusts of the wind and is about to collapse.

Our scientific platform.

It is confirmed by the complete coincidence of all the theoretical results obtained with all the known experimental results.

The universe is arranged very simply.

1. The universe is a solid elastic continuum - Gukuum. This continuum does not contain any numerical parameters or constraints. The requirements of its continuity and preservation are fulfilled only. From these requirements follows the implementation of the wave equation. The wave equation has localized solutions: wave vortices.
2. All visible and invisible objects of the universe, from large to small, are localized wave objects in this Gukuum.
3. All elementary particles, fields, photons, ball lightning, even lightning are different kinds of localized solutions of the wave equation. Such solutions exist. So far we have found at least six kinds of solutions, three in spherical spherical coordinates and three in cylindrical, but perhaps this the universe is not limited.



4. All wave objects in the Gukuum are described algebraically, by specifying the parameters of the elasticity of Gukuum and the three-dimensional wave equation. It is assumed that these are "small" and "linear" waves. And rather, even stress waves without deformations.
5. As the letter parameters (formulas are given by links) it is convenient to use the Lame coefficients L_1, L_2, L_3 (these are elementary combinations of the coefficients of compression, shear and torsion of a solid body). No numerical values are imposed on the Lame coefficients. Just the Lame coefficients L_1, L_2, L_3 and everything.
6. Thus, the universe and all the matter contained in it are described only by letters, algebra. However, objects can already be compared numerically. For example, the mass of a proton can be numerically compared with the mass of an electron.
7. Here in general terms. Details in our previous articles on https://www.academia.edu (.pdf) and on the site http://universe100.narod.ru (.doc, click the button **English**).

Concerning antimatter.

For those who are interested in antimatter proper, we give a link to our version of the explanation of the phenomenon of "antimatter" from ordinary matter. We still have two versions and we need a thorough analysis to determine which one is more correct.

https://www.academia.edu/34651096/Antimatter_that_does_not_exist._Hasty_name_and_recognition (.pdf) or http://universe100.narod.ru/115-Antimatter-angl-jpg.htm (.doc).

About the black holes.

We present our version of the behavior of matter in neutron stars. The substance can not be compressed to densities exceeding the neutron density. Because even long before such compression, the substance begins to turn into photons (according to the antimatter mechanism, see the previous chapter) and be emitted into space.

https://www.academia.edu/34719210/Why_there_are_no_black_holes._Deadlock_hypotheses_of_modern_physics (.pdf) or http://universe100.narod.ru/163-Black_hole-angl-jpg.html (.doc).

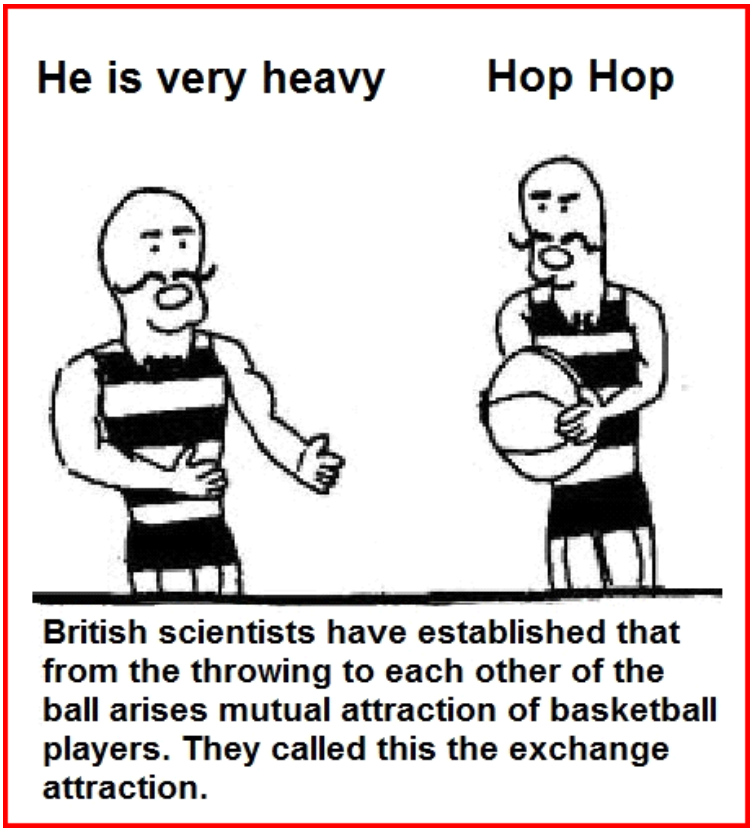
Experiment to determine the absolute frame of reference.
We have a proposal for an experiment to determine the absolute frame of reference. All are invited to attend.
http://universe100.narod.ru/160-Einstein-angl-ipg.html (.doc).

In addition, it is quite obvious that the existence of dark matter violates Kepler's laws of galactic motion. And consequently refutes the principle of Einstein's relativity. In any case, the existence of dark matter refutes all measurements of the speed of light in the last century and casts doubt on the whole foundation of the theory of relativity. All the fundamental principles of the theory of relativity should be checked anew. Corrected for dark matter.

Structure of elementary particles.
All articles of the site http://universe100.narod.ru and all articles of Dubinyansky and Churlyaev on https://www.academia.edu are devoted to this problem. For example:

https://www.academia.edu/33884339/Internal_density_distribution_in_the_neutron_proton_and_electron (.pdf) and http://universe100.narod.ru/060-Kandidats-angl-jpg.html (.doc)

Exchange interaction.



In occasion of quarks.

There is another pseudoscientific temptation. Explain the device of an object consisting of smaller "bricks". This creates the illusion of scientific advancement. Type to explain that the proton consists of quarks, quarks consist of smaller "mini-quarks", mini-quarks consist of even smaller "mini-mini-quarks", and so on. As you might guess, such a science is nothing more than a fraud for children. As a rule, children like these answers are satisfied for several days. Then new questions begin. If we look at our articles on the structure of elementary particles, then on density plots (from the radius) three large layers of density can be traced. Perhaps the presence of three layers of density left an imprint on the properties of elementary particles, and served as support for the "three quarks". But these layers are never separated from each other, it is impossible. Elementary particles are indivisible. And to speak of smaller "bricks" than elementary particles is meaningless.

About the Big Bang.

The Big Bang is a generally accepted cosmological model that describes the evolution of the universe from a point, namely, the beginning of the expansion of the universe before which the universe was in a singular state.

The Big Bang theory with the theory of the hot Universe is supported by the existence of relic radiation, as well as redshift in cosmic radiation.

To a large extent, the Big Bang model is a draw to the religious model of "creation."

In any case, for all the phenomena that are taken as the basis of the Big Bang theory, there are quite rational explanations within the framework of ordinary physics. Relic radiation is quite understandable from the position of an infinite and eternal universe. A red shift is explained by the gradual loss of energy by photons in the process of millions of years of motion and interaction with the cosmic background.

About the idea of strings, superstrings and branes.

Our opinion is that it's just a timid exercise before applying to describe the universe a normal three-dimensional wave equation.

Conclusions.

Yes, of course, you can turn science into a religious ritual. Speak smart phrases without thinking about their truth. As it happens in religion. The Bible has been refuted by scholars thousands of times. The number of contradictions in the Bible is enormous. But despite this, the Bible exists. Because she needs someone. Because it has some nucleus, which attracts millions of people.

But should you turn physics into Religion 2? Should mantras be repeated about antimatter, quarks, black holes, wormholes, entangled particles, Higgs bosons, "standard model", Big Bang, expansions and accelerations of the universe, gaseous or liquid ether, pointless structureless elementary particles, exchange interaction, strings, superstrings and branes, supersymmetry and other symmetries, quarks, magnetic monopoles, tachyons, time travel. The whole civilization lives by the production of carbohydrates. In 100 years the hydrocarbons will end. What's next? Is it worth spending these 100 years on pseudoscience? Is not it time to think about the truth?

Published: https://www.academia.edu/34900093/Delusional_ideas_of_modern_physics

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