

Dark matter and a new principle of motion

Abstract

Base of Byuon Theory (non-gauge theory of the formation of the world around us: the physical space (dark matter), the world of ultimate particles, etc on the basis of interaction of unobservable objects named “byuons) are shown. The article briefly outlines a new principle of motion using physical space as a reference medium. This principle may be used in transport of cosmonauts and spacecraft. It is used by stars when moving through space.

Keywords: theory of byuons, new non-gauge force, dark matter, new thrust

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Short communication

In¹⁻³ a new non-gauge theory of the formation of the world around us is developed (Theory of Byuon, TB). It is assumed that there is no space, no time, not a world of elementary particles, but there is a finite set of unobservable objects of byuons, the expression for which has the form:

$$\ddot{\mathbf{O}}(i) = \begin{cases} [\mathbf{A}_g x(i)], \\ -\sqrt{-1}[\mathbf{A}_g x(i)] \end{cases}$$

where $x(i)$ is the byuon length, real (positive or negative) quantity that depends on index $i = 1, 2, \dots, k$. Quantity \mathbf{A}_g is an internal potential whose modulus is equal to the cosmological vector potential ($A_g \approx 1.95 \cdot 10^{11}$ Gs·cm). The world around us is formed as a result of minimizing the potential energy of interaction of byuons in the one-dimensional world formed by them. As a result of this minimization, the expressions for byuons actually include a certain total potential (\mathbf{A}_Σ), which in absolute value (in the energetic sense) is always less than \mathbf{A}_g . In TB, part of the masses of elementary particles associated with the process of formation of their internal physical space is proportional to the modulus of \mathbf{A}_Σ . If you reduce the total potential due to the potentials of any fields (for example, due to the potential created by elementary particles of any body), then any material body will be pushed out of the area of weakened \mathbf{A}_Σ .

We called the area of this change in physical space the information image (I) of this object. As a result of the above, a previously unknown new non-gauge force of nature¹⁻¹¹ and a new energy appear. The author called the new energy byuon energy ($E = \Delta mc^2$). The author and his co-authors have carried out a huge amount of experimental research on the new non-gauge force of nature based on various research methods: high-current magnets, torsion and piezoresonance balances;¹⁻⁵ plasma installations of various types,^{6,7} gravimetric systems based on the Canadian Sodin gravimeter,⁸ studies of changes in the decay rate of radioactive elements⁹⁻¹¹ (note that alpha and beta decay are purely random processes within the standard physical model of the universe), etc. Thus, the existence of a new non-gauge force of nature can be considered proven.

In TB, as stated above, physical space arises and is not given, as in all existing physical theories. TB reveals the nature of quantum mechanics.^{1-3,12} In TB it is shown that object 4b (four-contact interaction of byuons, $mc^2 = 33$ eB) has a Heisenberg uncertainty interval equal to 10^{28} cm.

This object creates the three-dimensional physical space we observe, which is cold dark matter (The density of the material is

10^{-29} g/cm³). Object 4b forms the internal physical space of each elementary particle. At the same time, it participates in the formation of the surrounding space at a distance of 10^5 cm from each particle. This is warm dark matter. (More details can be found in).¹³

There aren't many principles governing the movement of objects in nature. For example, ships use water as a support medium when propellers are in motion, airplanes use air, and cars are propelled by the Earth. Sailing vessels use the force of the wind. This principle of propulsion could be used to propel spacecraft by using the pressure of the solar wind or the pressure of visible light from the Sun. But more often, when exploring space, the jet principle of movement is used. Experts working in the space industry know that, based on Newton's third law, the rocket's center of mass remains the same as it was at launch.

From here it is not possible to fly to the star using the jet principle of movement. Because the weight of such an object would be enormous on the scale of our planet and it would never take off from it.

In^{1,2,14} a new principle of motion is proposed that uses physical space - dark matter - as a supporting medium. Based on the analysis of the experiments,¹⁻¹¹ we developed and created a ground-based model of a low-thrust space propulsion system, the general appearance of which is shown in Figure 1.¹⁴



Figure 1 A test bench for researching a new principle of motion with a model of the thrust.¹⁴

This thruster model generates approximately 20 grams of thrust with an energy consumption of approximately 5 watts per gram of

thrust. This performance is approximately 30-40 times better than that of modern plasma thrusters used in space.

Of course, the principle of motion under discussion is used by nature. For example, our star, the Sun, moves toward the constellation Hercules, using a new principle of motion and a new non-gauge force of nature in the form of traction. The latter is described in detail in.^{1,2}

To move in space, the Sun uses its magnetic system, which, due to the vector potential, affects the value of \vec{A}_g and creates a region in space from which matter is pushed out, creating a thrust towards the constellation Hercules. Let us elucidate the action of the new force on pulsars. Pulsars are neutron stars formed as the result of collapse and explosion of a Supernova with the duration of an order of 10^{-3} sec. As shown in the works,¹⁵ the observable velocities of pulsars and their angular distribution can be explained by the action of the new force that must clearly reveal itself in the process since the magnetic fields of pulsars may be as great as 10^{12} G, and hence the magnitudes of the vector potential may come close to the modulus of \vec{A}_g . The reactive effect causes a pulsar to move oppositely to the direction of the new force.

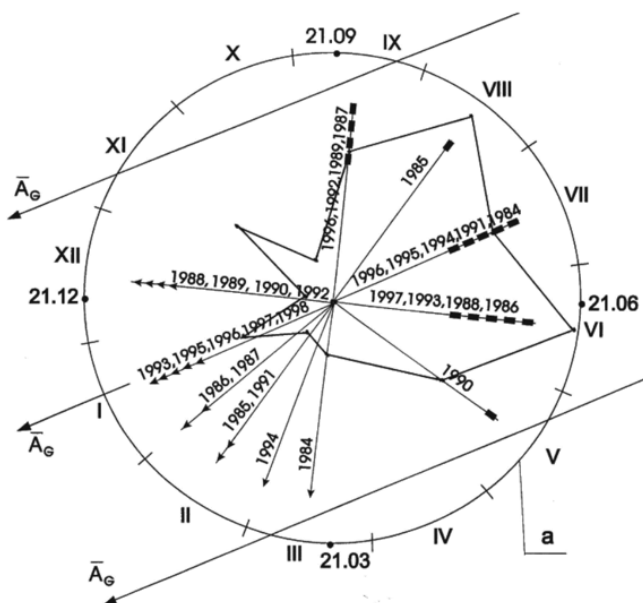


Figure 2 The angular histogram of season distribution (fourth and further months of year) of maxima and minima of decay rates on the Earth orbit (a) in the process of its motion around the Sun for a 15 years experiment with ^{226}Ra ([16]). Maxima are indicated by arrows, minima by black rectangles. The Sun is in the center of the diagram. On the line from the orbit portion with decay maxima or minima to the place of the Sun, the corresponding years are indicated. The solid line shows angular distribution for velocity directions of pulsars motion. A_g is the cosmological vector potential. 21.03 etc. are characteristic points of the Earth orbit.

As is seen from Figure 2, the main masses of pulsars move along the reverse cone of new force action^{3,7} which is in correspondence with the prediction of the TB and the angular opening of the season arrangement of ^{226}Ra α -decay¹⁶ rate also given in Figure 2. Pulsars are a very good tool for studying the direction of the vector \vec{A}_g on the scale of our Galaxy.

At the same time, the TB predicts that both our star, the Sun, and pulsars should move with some acceleration relative to nearby stars, which astronomers may be able to notice during their observations during long-term measurements. So, not everything in the world is random, if you look at it in more detail. For example, the movement of the stars.

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