

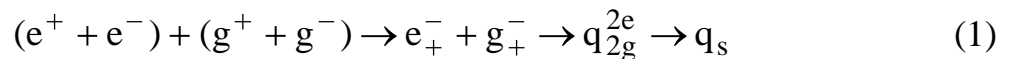
Electromagnetic Quantization of the Universe

Professor Vladimir Leonov

We live in an electromagnetic universe. Electromagnetism it is the foundation of our universe. Galaxies, stars, planets and nature have arisen from this electromagnetism as primordial matter. This is the global electromagnetic field of the universe that I discovered in 1996 [1, 2]. Quanton is a new particle of the quantum of space-time and it is the carrier of superstrong electromagnetic interaction (SEI). Quanton includes four quarks: two electrical $\pm e$ and two magnetic $\pm g$ and it unite electricity and magnetism in the global field SEI [1, 4]. The diameter of the quanton is very small; it is 10 orders of magnitude smaller than the diameter of the proton. It is an ultra microworld. This is an ultra microcosm at the level of fundamental Leonov's length [5, 6]. Therefore, we cannot observe the SEI field at the level of real dimensions. We can observe only a violation of the electromagnetic equilibrium of the SEI field as a manifestation of the laws of electromagnetic induction and Maxwell's equations. Gravity is a deformation of the SEI field (Einstein's curvature). Quantization of the universe is the physical process of filling quantons of its volume. But we don't know who did it [1].

Keywords: universe, quanton, quarks, electrical quark, magnetic quark, SEI field.

Quantization of space-time is one of the main problems of theoretical physics [1, 2]. Quantization of space-time by purely mathematical methods at the level of Planck length $\sim 10^{-35}$ m did not yield positive results. The problem of quantization of space-time was solved at the level of Leonov's length $\sim 10^{-25}$ m only after the discovery of the quanton. Quanton includes four quarks: two electrical $\pm e$ and two magnetic $\pm g$ and it unite electricity and magnetism in the global field SEI. The unification of electricity and magnetism inside a quanton can be described by the following reaction [1–6]:



where e_+^- and g_+^- are the electrical and magnetic dipoles;

q_{2g}^{2e} is the electromagnetic quadrupole;

q_s is the space-time quantum, i.e., quanton

In (1), the electrical quark is denoted by e^- . In contrast to the monopole, the electron is denoted by two indexes e_+^- , where the index m indicates the presence of mass in the particle carrying the charge with negative polarity.

It may be assumed that the reaction (1) consists of several stages. Initially, the quarks-charges merge into electrical e_+^- and magnetic g_+^- dipoles. Subsequently, the dipoles merge to form the electromagnetic quadrupole q_{2g}^{2e} (Fig. 1). Finally, as a result of electromagnetic compression of the quadrupole q_{2g}^{2e} under the effect of colossal forces the electromagnetic space-time quantum q_s , i.e., quanton, forms and has the form of a spherical particle (Fig. 2).

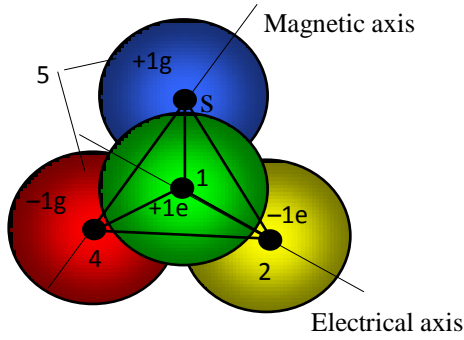


Fig. 1. The electromagnetic quadrupole (top view).

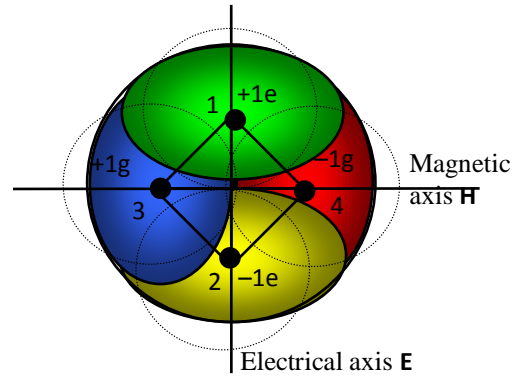


Fig. 2. The quanton in projection (rotated in space).

The process of electromagnetic quantization of the space is reduced to filling the space with quantons. This process has taken place throughout the universe. At present, it is difficult to even propose a hypothesis regarding the primary source of quantization of the universe. If there was the Big bang, it could have taken only in the quantized universe, and would have to be associated with the formation of matter in all its varieties: from elementary particles to stars and galaxies.

In the quantization of the universe it is important to obtain the homogeneous and isotropic space-time. Consequently, the structure of the quanton can form. The special feature of this distribution of the charges on the tips of the tetrahedron inside the quanton prevents the formation of the spatial mirror symmetry of the electrical and magnetic axes (Fig. 2). This arrangement introduces the element of chaos into the spatial orientation of the quantons when they fill the volume of the quantized space-time. In the quantized volume we cannot specify any priority direction of orientation along the electrical or magnetic axes of the large group of quantons. The direction of the electrical or magnetic axes of the quantons in the space changes randomly, determining the isotropic properties of the space-time. Taking into account the small dimensions of the quanton of the order of 10^{-25} m, on the level of the dimensions of the elementary particles 10^{-15} m, the space-time already represents a homogeneous and isotropic medium. The quanton itself is an electrically and magnetically neutral particle ensuring on the whole the electrical and magnetic neutrality of the quantized space-time. All the manifestations of the magnetism and electricity are associated with the disruption of the electrical and magnetic equilibrium of space-time.

There is some analogy between the structure of the space-time and a network of force lines of electrical and magnetic fields, linking the entire universe together (Fig. 3). Taking into account the linear form of the Maxwell equations in space, it may be assumed that the proposed structure of quantized space-time determines its electrical and magnetic constants of vacuum ϵ_0 and μ_0 whose effect also extends to the internal region of the quanton.

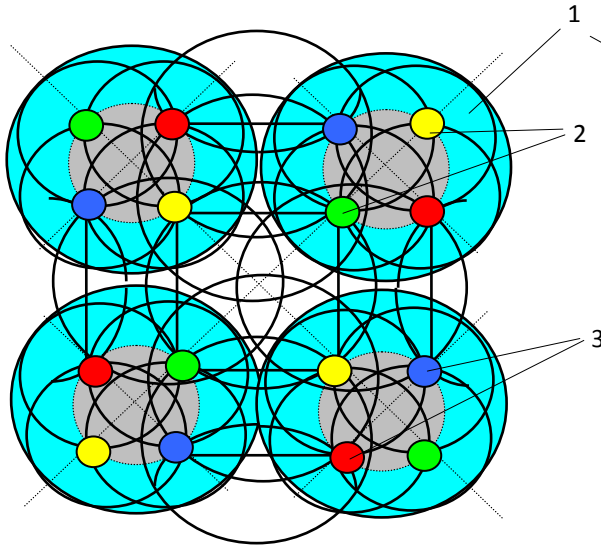


Fig. 3. Grid model of the quantized space-time in projection in the form of lines of force. 1) quantons; 2) electrical quark; 3) magnetic quark.

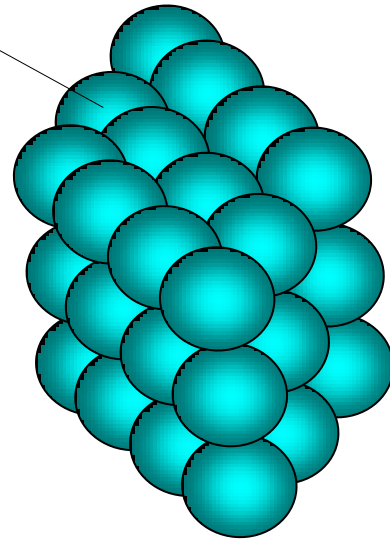


Fig. 4. Solid-state model of quantized space-time.

This network can be regarded as some solid-state field structure (Fig. 4) with no analogy with conventional matter but characterized by colossal elasticity. Consequently, the motion in the space-time of the elementary particle is determined by the wave transfer of matter. The wave transfer of matter forms the basis of the wave (quantum) mechanics and determines the effect of the principle of corpuscular-wave dualism in which the particle shows both wave and corpuscular properties, being the integral part of space-time [1–6].

References:

- [1] V. S. Leonov. Quantum Energetics. Volume 1. Theory of Superunification. Cambridge International Science Publishing, 2010, 745 pgs.
- [2] Download free. Leonov V. S. Quantum Energetics. Volume 1. Theory of Superunification, 2010. <http://leonov-leonovstheories.blogspot.com/2018/04/download-free-leonov-v-s-quantum.html> [Date accessed April 30, 2018].
- [3] Vladimir Leonov. Electromagnetic Nature and Structure of Cosmic Vacuum. [viXra:1910.0287](https://arxiv.org/abs/1910.0287) submitted on 2019-10-16.
- [4] Vladimir Leonov. Unit of Measurement of Magnetic Charge is Leon. [viXra:1910.0436](https://arxiv.org/abs/1910.0436) submitted on 2019-10-22.
- [5] Vladimir Leonov. The Calculated Diameter of the Space-Time Quantum (Quanton). [viXra:1910.0402](https://arxiv.org/abs/1910.0402) submitted on 2019-10-21.
- [6] Vladimir Leonov. Fundamental Length - Leonov's Length. [viXra:1910.0478](https://arxiv.org/abs/1910.0478) submitted on 2019-10-23.