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STUDY OF THE INFLUENCE OF THE PROVISIONS OF THE PRINCIPLE OF RELATIVITY AND THE HIGGS BOSON ON THE STRUCTURE OF SUBSTANCE

Abstract: The principle of relativity was introduced into scientific research by Galileo Galilei more than 300 years ago and has been improved along with a more complete understanding of the shape and structure of the observable world. Thus, H. Galileo's principle of relativity made it possible to establish a connection between the orbits of the planets of the solar system depending on their masses. It should be noted that astrophysicists still use this principle to estimate the movement of objects outside the solar system.
Keywords: principle of relativity, Higgs boson, substance, movement of masses, photon, gravitational mass, "dark" mass.

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The next significant step in the development of this principle is the Special and General theories of relativity, formed by Einstein, the fundamental novelty of which is that the movement of masses is related to the speed of their movement and the time of transmission of the interaction between the masses.

Taking the maximum speed of a photon (light) as a postulate, the authors showed that at such a speed the mass grows to infinity, which created dead ends in the study of the foundations of the Universe.

This happened for the reason that the author of both theories unjustifiably equated inertial and gravitational masses in the statement itself, while they differ significantly in the speed of transmission of interactions.

The third stage of the development of the principle of relativity is associated with a significant expansion of the understanding of the structure of masses. The American astrophysicist Wilkinson (2003) established that there is a mass that “glows” (that is, a mass that emits photons) and a “dark” mass that does not emit photons, but manifests itself by a strong gravitational interaction with a propagation speed of almost 19 orders of magnitude higher than the speed of light.

Research conducted on European satellites (2009-2012) confirmed Wilkinson's conclusions [8] and at the same time established the energy unity of the quanta of the "luminous" substance and the "dark" mass, which is the energy donor of the "luminous" substance.

Taking into account such scientific results, the authors of the report proposed the fourth stage of the development of the principle of relativity by means of biquantum modeling of the gravitational and electromagnetic interactions of a quantum of "luminous" matter and a quantum of "dark" mass.

At the same time, the form of a quantum of "luminous" matter is represented in the form of a sphere, and the form of a quantum of "dark" mass - in the form of a pseudosphere with infinitely long "tails" along the axis of the OY, which makes it possible to study their parameters in local and extralocal space with taking into account their thermodynamic conditions.

Since the "dark" mass is a donor for the "luminous" matter, the proposed biquantum modeling made it possible to numerically evaluate the change of the "dark" matter (see the figure) in the event of separation from it of the masses of the Higgs boson, neutron, proton, electron, Dirac magnetic monopole and photon.

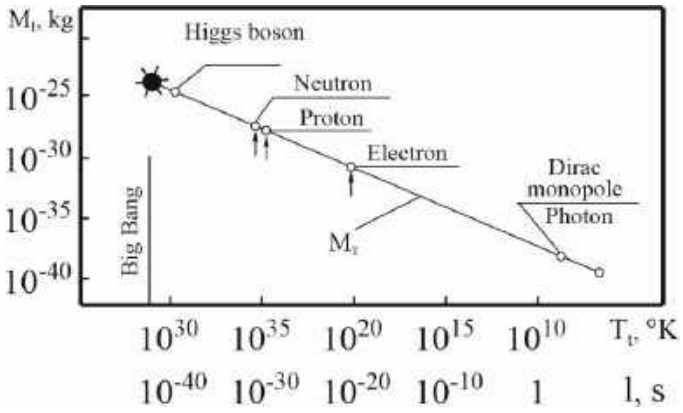

Figure. Temperature-time parameters of the creation of some particles of matter from the Higgs boson

The fourth stage of the development of the principle of relativity is proposed. A distinctive feature of this stage is that the gravitational and electromagnetic interaction of the quantum of

"luminous" matter and the quantum of "dark" mass is included in the methods of studying the observed matter.

Since the donor for "light" matter is "dark" mass, the separation of such fundamental particles as the Higgs boson, neutron, proton, electron, and even Dirac's magnetic field from matter is shown on the example of its change in various thermodynamic conditions. At the same time, we received a numerical estimate of not only the mass, but also the speed of their interaction.

In addition, on the basis of the fourth stage of the development of the principle of relativity, it is established:

- The source of gravity is a particle of "dark" mass with a mass equal to 2.7606 1041 kg and a gravitational velocity of interaction $\nu_g = 1.6711\ 10^{-56}$ m/s [4];

- The difference between the values of gravitational (t_g) and inertial mass (m_{in}), from which it follows that $m_g > m_{min}$ by $2.4664\ 10^{-29}$ conventional units, which once again confirms the illegitimacy of the initial position in the formulation of the principle of relativity proposed by Einstein.

Thus, the proposed fourth stage of the development of the principle of relativity made it possible to avoid dead-end research and is an important stage in the numerical estimation of the parameters of the "dark" mass.

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