

# THE THEORY OF PHYSICAL VACUUM AND BREAKTHROUGH TECHNOLOGIES

**Gennady Shipov**

(Russia, Moscow, Institute of Physics of Vacuum, <http://www.shipov-vacuum.com>)

## **Abstract**

A new scientific paradigm is proposed - the theory of Physical Vacuum [1]. This theory appeared as a result of the development of ideas of A. Einstein to create a Unified Field Theory [2-5]. Einstein's program involves solving two fundamental problems of physics: 1) geometrization of electrodynamic equations (the first problem of Einstein [6]); 2) geometrization of quantum fields (the second problem of Einstein [7-9]).

Psychophysics is the youngest and most important (from the author's point of view) branch of physics, which asymptotically indicates the existence in nature of the highest level of reality - "Absolute Nothing", which in the theory of Physical Vacuum is synonymous with God. It can already be argued that in order to study "divine physics" we will have to abandon the classical principle of causality and the speed of light  $c$  as the maximum speed [1].

The modern scientific paradigm is based on the equations of Physical Vacuum, which include the equations of classical mechanics, special and General relativity (Newton's mechanics, classical Maxwell-Lorentz electrodynamics and Einstein's theory of gravity). The other numerous physical theories have a phenomenological, constructive, or phenomenological-constructive nature. For example, the modern theory of elementary particles-the Standard model, is a phenomenological-constructive theory based on a huge experimental material described by methods of constructive quantum field theory [11]. It should be noted that quantum mechanics and its generalization, quantum field theory, are not fundamental physical theories, since their physical justification remains the subject of much discussion in theoretical physics. Therefore, the highest achievement of quantum field theory-superstring theory (or M-theory of "Everything" [12]) belongs to the class of constructive theories, because it does not have a fundamental physical justification, such as, for example, have special and General relativity.

It should be noted that Albert Einstein never engaged in phenomenological theories, such as the theory of nuclear forces or the theory of weak interactions. He believed that phenomenological theories are built inductively, adding each time there are experimental deviations from the already accepted equations, a new constructive field with a new phenomenological constant of interaction.

The main achievement of the theory of Physical Vacuum developed by the author [1] is "dropped out of sight" of theorists - the field of Inertia, which is the third fundamental physical field given to each of us in everyday sensations (the other two fields are gravitational and electromagnetic). Every day we feel the action of the field of inertia through the four forces of inertia, without realizing it. The dynamics of the field of Inertia in a linear approximation is described by the equations of quantum theory (Schrodinger, Dirac), in which the wave function  $\psi$  is expressed through the strength of the field of Inertia or through the potential of this field (analogous to secondary quantization). Therefore, we conclude that modern quantum theory is a constructive theory that simulates the simplest dynamics of the fundamental physical field of Inertia. Analytically, the field of Inertia is described by the torsion of space and was predicted by the French mathematician Eli Cartan [13] in 1922. In [1], the author showed that the relativistic

rotation of matter changes the geometry of the event space of event, increasing its dimension to 10 and generating torsion and curvature of the nonholonomic space of absolute parallelism  $A_4(6)$ .

The practical use of the field of Inertia (mathematical term-torsion field) was presented in the work of A. Akimov [14] and many other researchers [15-18]. As a result of scientific research, nine torsion technologies were developed: 1) spintronics; 2) energy; 3) materials science; 4) medicine; 5) transport; 6) communication; 7) Psychophysics; 8) agriculture; 9) search for minerals. Some of these technologies have been brought to a commercial product, and the rest continue to develop in order to bring to a commercial product. The difference between torsion technologies and existing ones is their exceptional efficiency at low material costs [15-18]. Currently, torsion technologies are being developed not only in Russia, but also in other countries.

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