4. BENEFIT AND HARM OF RELATIVISM FOR FUNDAMENTAL SCIENCE

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When we say about the truth, the latter can not be relative one. The truth can be only absolute one. Otherwise there is a serious scientific mistake or an obvious falsehood. The existing crisis in the natural science is due to an obvious overestimation for the role of the relativity theory as a fundamental science. It is known, developing the general relativity theory (GRT) Einstein defines the GRT as a theory coupling gravitation with electromagnetism. Nothing has been achieved. The GRT has not been a theory of gravitation, since it can not explain any causes of gravitational interaction. From the formal point of view the mathematics of four-dimensional space-time allow to find some relations in the range of superhigh velocities. But that is not enough. The GRT is filled with paradoxes and unsuitable already for any predictions.

No doubt, the role of Einstein is of great importance for the progress in physics. He was a pioneer and had therefore the right to mistake. The mistake was in the abandonment of any investigation of space structure, restricting himself by a space geometrization. Einstein's successors have deteriorated the situation, transforming the incomplete theory into an irrefutable dogma. As a result, the science of electromagnetic structure of space has been rejected over century, retarding the development of quantum theory. The way out the crisis is found in establishing the static electromagnetic discrete structure of quantized space.

1. Introduction. In three previous reports [1,2,3] I shown that the return from relativism to the conception of Lorentz's fixed electromagnetic ether withdraws fundamental science from the crisis state. Over the past half-centuries the science was in this state and any opposite viewpoint was ignored entirely due to the efforts of orthodox followers of relativism.

Today I repeat, the gentlemen orthodox theoreticians and relativism supporters, you have been late to distribution of new ideas in fundamental science. The uniform theory of field is created not due to the theory of relativity but contrary to it. As it usually is in the science advancement history, the answer laid not there where it has been searched. And even on the contrary, ones spoke that the direction, formulated by great Lorentz, is erroneous. Itself Lorentz regretted that he «had not manage to obtain the equations related to moving axes, in the exactly same form as the equations for fixed system» [1].

What did Lorentz lack in to bring the theory of fixed electromagnetic ether up to the logical finish? There was no infinitesimal - the elementary particle as a carrier of electromagnetic field. The century has required in order to discover intuitively the elementary quantum of space, i.e. the carrier of electromagnetic field in the theory of elastic quantized (space) medium (EQS) [1].

The quanton discovery has been held due to a property investigation of electrical and magnetic monopoles (massless elementary charges) at their interaction inside the quanton. Naturally, at that time Lorentz (author of the electron theory) was not able to introduce the magnetic charge for space structure. The magnetism was believed by him to be a manifestation of electricity and to possess no autonomous magnetic charge. Only three decades later Dirac has introduced (let hypothetically but nevertheless) the independent magnetic charge, named as Dirac's monopole, in theoretical physics. But the experimental searches of Dirac's monopole have given no results.

Only the EQS theory has allowed us to understand that the magnetic charges exist really but only not in a free state. They are linked with electrical monopoles in the uniform electromagnetic static quantum of space (quanton). As a carrier of magnetic and electrical charges the quanton belongs to the fixed Lorentz space. The quanton possesses a concrete structure [1].

But main, the quanton is a joining particle:

- Joins electricity and magnetism in electromagnetism by being the carrier of electromagnetic field (vacuum field) and the carrier of superstrong interactions;
- Joins space and time by being the elementary quantum of space and a volume electromagnetic resonator (the time carrier);
- Joins the electromagnetic Universe by linking all objects (from elementary particles up to galaxies) together through the continuous

vacuum field;

- Joins electromagnetism and gravitation through the vacuum field by equalizing the energies for electromagnetic and gravitational fields, by defining the elementary particle structure and the limit values for mass and energy of particle;
- Joins the strong interactions through the mass defect, gravitation and electromagnetism by defining the nucleon structure;
- Joins all other fundamental interactions through superstrong interactions.

The environmental space is a specific static electromagnetic field, which structure has been discovered in the EQS theory. This fact is verified experimentally by all electromagnetic and gravitational processes. Owing to the vacuum field the mechanism of synthesis of elementary particles from vacuum and the nuclear forces nature is established.

The quanton discovery has resulted in discovery of the fifth type of superstrong fundamental interaction joining all others through the vacuum field.

Naturally, the theory EQS denies completely the relativism as a non-physical theory, which is constructed phenomenologically on completely erroneous conceptions and recognizes wrongly the space as the absolute emptiness.

2. Benefit of relativism. Doubtlessly, up to middle of the twentieth century, the scientific direction, developed by Einstein's in the relativity theory (initially special (STR) and then general (GTR)), has played the enormous positive role in basement of new physics. It is possible to list the basic scientific results associated with the relativity theory:

- Establishing the mass-energy equivalence;
- Establishing the gravitation-inertia equivalence;
- Introducing the relativistic factor in Newton's dynamic equation and taking into account the increase in mass and energy for relativistic particles;
- Introducing the space-time conception;
- Predicting a possible model for the Universe, gravitational waves and black holes.

They are the largest achievement for the relativity theory (excepting solution of a number of special problems). However, the theory of relativity could not bring all its intentions up to the logical finish. The relativity theory was conceived initially by Einstein as the uniform field theory joining gravitation and electromagnetism. But having failed to discover the nature of gravitational interactions it has not been held even as a gravitation theory. The theory of relativity could answer no question on the phenomenon nature.

The well-known French physicist Brillouin characterized GTR: «The general theory of relativity is the brightest example of the magnificent mathematical theory constructed on sand and leading to increasing heap of mathematics in cosmology (a typical example of scientific fantasy)» [4].

3. Harm of relativism. Since the second half of XX century the theory of relativity predicted nothing. Furthermore it became a brake for science as the science implies the continuous development of knowledge. But it was not a fault of Einstein, who changes all our imaginings on space - time. The followers of the ingenious physicist have managed to transform the developing and uncompleted theory into a dogma. Any attempts to put under doubt the relativity theory basis were halted.

The basic mistake of the relativity theory consists in refusing the light-transmitting medium as the absolute space. The natural sciences were focused to a point of relativity. Everything has become relative. The absoluteness has disappeared with abolition of the absolute space.

But the true can not be relative. The true can be absolute only. Otherwise there is the deepest scientific error or a manifest lie. I think, in relation to space (recognizing it as the absolute emptiness) Einstein was mistaken sincerely. The natural development of science in spirit of classicism has been substituted by the absolutely invented concept of the relativity principle. Throughout many years the historians of science will studied the phenomenon of relativism manifestation in science.

4. Brief comparison of the relativity theory with the EQS theory. The basic reasoning for the relativism supporters is that ostensibly the relativity theory has been examined repeatedly in the experiments and the calculation conclusions agree perfectly with experiment. It is not the argument for scientist. The agreement

between a mathematical function and the experimental dependence does not mean that this function explains phenomenon nature. In this case we have only a phenomenological description for the phenomenon in terms of the mathematical formula.

If to be objective, the mathematical means of the relativity theory is not so perfect as it is represented. So, for example, the solution of the Einstein dynamical equations gives the infinitely high values of mass and energy for the relativistic particles. But it is not proved experimentally. This solution agrees with experiment only for a particular range of speeds.

All mathematical results, obtained from the relativity theory, is shown in my three previous reports to can be very easily obtained without employing the relativity theory and only by returning to a concept of the absolute fixed electromagnetic space of Lorentz in the theory EQS. Moreover there are new results, which were not dreamed by the relativity theory, including determination of the limit parameters for relativistic particle and many others. It is likely to be an indemnity to tradition - to name the particles, moving in the absolute vacuum field with a speed close to the light speed, as relativistic ones, though such movement has no relation to the relativism.

In the EQS theory «it has been possible to obtain the equations, referred to mobile axes, in the exactly same form as the equations for fixed system» [1], as it was dreamed by Lorentz. It has been achieved owing to imposing the spherical invariance principle to the vacuum field. According to the principle the mass movement in vacuum is considered as a displacement of spherical deformation of the vacuum field in the fixed absolute static electromagnetic field (space). The quantized electromagnetic medium has no analogues compared with the known continuous mediums (gas, liquid and solids) and reminds the solids with correction for own specific superelasticity.

As the scientist, who has developed the EQS theory for replacing of the relativity theory, I analyzed the relativism phenomenon (to be false in essence), which has played the substantial role in physics development. The relativism phenomenon is in a partial coincidence of the equations of gravitational potential balance in vacuum field for STR and EQS theories, although Einstein spoke never itself on any balance of gravitational potentials in vacuum field. Einstein spoke about the squared light speed, thereby not guessing that he considered the problem of gravitational parameters of vacuum by specifying the gravitational potential of vacuum field.

In order to describe mathematically the vacuum field, it is shown in the EQS theory to should construct the balance of gravitational potentials (34) in [3]

$$C_o^2 = C^2 + \varphi_n \gamma_n \qquad (1)$$

where C_o^2 and C^2 are gravitational potentials for vacuum field, accordingly non-perturbed and perturbed by deformation, m^2/s^2;

$\varphi_n \gamma_n$ is a gravitational potential of perturbation represented as the product of Newton's potential φ_n and the normalized relativistic factor γ_n.

The balance of gravitational potentials (1) is the basic equation describing state of deformed vacuum field. This is an exact spatial equation obtained as a result of solving Poisson's equation for elastic quantized (space) medium (EQS). The balance of gravitational potentials takes into account deformation perturbation of a mass moving in vacuum with any speed up to the light one. Naturally, the light speed for non-deformed (C_o) and deformed (C) vacuum is found from (1) as a limit quantity.

In the relativity theory the gravitational potential of perturbation $\varphi_n \gamma_n$ is replaced by the squared speed of body (particle) movement v^2 [2]

$$C_o^2 = C^2 + v^2 \qquad (2)$$

thereby defining the four-dimensional interval

$$C^2 = C_o^2 - v^2 \qquad (3)$$

or

$$C^2 dt^2 = C_o^2 dt^2 - v^2 dt^2 = \\ = C_o^2 dt^2 - (dx^2 + dy^2 + dz^2) \qquad (4)$$

The expression (2) is a notation for the magnitude of complex-valued speed of body in vacuum field [2]. It is also a representation form for Lorentz's transformations. But the four-dimensional interval (4) represents only the magnitude of complex-valued speed in vacuum field and can not be the basic spatial equation as it is supposed in the relativity theory.

Yes, it is possible to contend that, analyzing the four-dimensional interval (4), Einstein was very close to success in his space

description. But the four-dimensional interval (4) is shown in the EQS theory to be a quite rough description of vacuum field taking into account no vacuum field perturbation by the potential $\varphi_n\gamma_n$ (1).

All spatial equations in the relativity theory are shown from the comprehensive analysis to be approximated equations. It leads to the roughest calculation errors resulting in the infinitely high values for mass and energy. Therefore the colossal complication of mathematical means has been required in GTR. Nevertheless this complication has not solved the problems of vacuum space description both for electromagnetic and for gravitational fields.

It would be possible to carry out more detailed comparative analysis for the relativity theory and the theory EQS. But there is no necessity to do it since such analysis is presented in [1,2,3]. It is important to pay attention to the formula for the basic equation (1), describing state of vacuum field in the EQS theory, and the approximated analogue, represented in the four-dimensional interval form as a magnitude of the complex-valued speed (2).

It is necessary to pay attention to treatment of the mass-energy equivalence principle. The rest energy of particle is specified as the product of the squared light speed and mass in STR or as the product of the gravitational potential for vacuum field by the gravitational charge (mass) in the theory EQS. We obtain the same numerical results but the physical sense of phenomenon is completely different.

Doubtlessly, in these four brief reports I could not cover all aspects for the theory EQS, including new approaches to quantum electrodynamics and to the problem of practical use of vacuum field energy in the power industry (i.e. in new power cycles based on elementary particle synthesis in vacuum field). After publishing the third part of the theory EQS [5] it will be possible to familiarize with new approaches to solution of the mentioned problems and many other questions.

5. Alternative to the Michelson and Morley experiments. When it comes to the experimental verification of the EQS theory, the answer to such question will be greatly time consuming since the theory EQS allows us to explain practically any physical phenomenon investigated in the nature including the purely electromagnetic processes and the elementary particle synthesis in vacuum.

On the other hand, the basic experiments, confirming ostensibly the relativity theory correctness, are the experiments of Michelson and Morley on ether wind detection. The ether wind abstraction is shown in the theory EQS to be unacceptable for the vacuum field concept. The vacuum field follows the spherical invariance principle, which is validated experimentally by the experiments of Michelson and Morley [3].

Naturally, it was necessary to find a well-known experimental fact denying the relativity principle and proving evidently the interaction of body with the vacuum field as an absolute medium. These experimental facts are the gyroscopic effects based on the laws of rotation inertia.

The inertia is supposed in classical mechanics to be own property of body and the causes of the inertia as a phenomenon are not considered. The theory EQS establishes the unity of vacuum field and body, which mass is resulted from spherical deformation of vacuum by the elementary particles included in the body structure. According to the field superposition principle the sum of vacuum field deformations for all particles determines the body mass. The gravitation-inertia equivalence principle establishes that the cause of inertia is also the vacuum field deformation both spherical and gradient (in a certain direction inside the gravitational border) [1,2].

Fig. 1 represents the diagram for an experiment demonstrating the indivisible coupling between rotating body and vacuum field on example of precession suspension of a gyromotor in space.

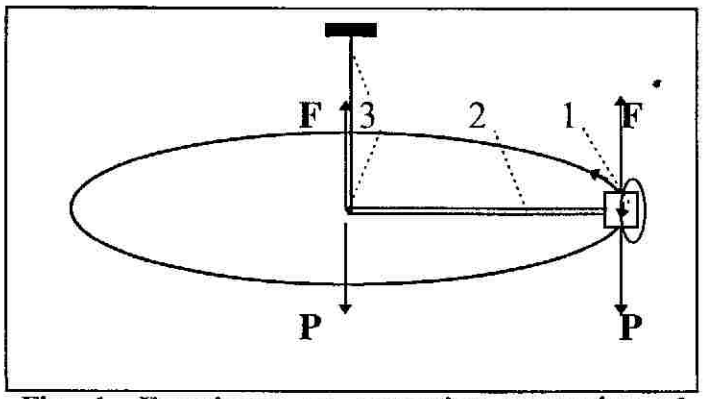

Fig. 1. Experiment on precession suspension of gyromotor in vacuum field.
1 — gyromotor , 2 — lengthened shaft, 3 — plumb line.

The gyromotor 1 is an electric motor with a flywheel rotating up to the frequency of 20000 rev/min. The gyromotor is fixed to a rigid lengthened shaft 2, suspended on a plumb line 3 by the opposite tip. This system possesses a remarkable property. Due to gyromotor flywheel rotation, the installed system precesses along a circle and keeps the gyromotor in suspended state. Despite of the gravity **P** it is an effect of supportless suspension of the gyromotor in space.

It is possible to treat this experiment as a gyroscopic moment effect on the shaft 2. As an effect result the force **F** arises. But it only a facile manifestation for the gyroscopic moment. We are interested in the causes of its occurrence. The causes are in the flywheel inertia, which is resulted from vacuum field deformation at precession. Finally, the unbalanced gyroscopic moment and the hoisting force **F** are formed. If to remove the precession, the force **F** disappears. This effect is resulted from the complex processes associated with vacuum field deformation.

If to distract attention from explaining the effect causes and to construct the balance equation for the forces fig. 1 according to the theoretical mechanics rules, we obtain the hoisting force **F,** counterbalanced by the gravitational force **P,** and the force system translation to the suspension point. Such force system is possible only if the force **F** is an external force, arisen as a result of the interaction of system with vacuum field. To be more specific, this experiment specifies the unity of mass and vacuum field.

It is necessary to note, that the force **F** direction coincides with the direction of force influencing on a rotating cylinder in high-speed liquid (gas) flow in Magnus's effect. It points that the vacuum field represents a continuous medium, but distinguished from all known mediums. The vacuum field tries to be always in equilibrium and responds to the external perturbation (inertial one for our case) [6].

It is necessary also to note, the doctor Neganov (Dubna), having investigated gyroscopic effects (including Thomas's rotation effect), supposes that the manifestation of such effects is obliged to existence of the absolute space [7]. The experimental investigations of Smirnov (Dubna) have allowed to offer the hypothesis on existence of a static electromagnetic field [8], which is the cornerstone in the theory EQS as a static electromagnetic vacuum field. However the balance violation for static electromagnetic field is manifested much more effectively for all electromagnetic processes occurring in vacuum.

Doubtlessly, a wealth of scientists (for example [9-14] and others) is engaged in developing of the absolute space model. However, the structure of electromagnetic vacuum field is considered only in the theory EQS.

5. Forecast to development of fundamental science in the nearest prospects. The theory EQS allows to predict not only the fundamental science development but also the perspective development of essentially new technologies in the power industry, space transport, communication, element transmutation, biotechnology, genetics, medicine and other branches.

First of all, I would like to comment what the physicist- theoreticians, unfamiliar with the theory EQS, think concerning the development of fundamental science. In particular, the known American expert in the superstrings theory M.Cacu comments the development of gravitation theory in the following context: «Newton recognize the gravitation as a force acting immediately through distance. Einstein has assumed, that the gravitation is caused by the curvature of space - time. The primitive joining the general theory of relativity and quantum mechanics gives the diverging theory, so-called quantum gravitation, in which it is supposed that the gravitation is created through exchange by special «particles» - gravitons. In the theory of strings it is supposed, that the gravitation is due to exchange by closed strings» [15].

Clearly, M.Cacu criticizes Newton' theory of gravitation, the gravitation theory of Einstein, the quantum gravitation and sees the exit in development of the superstrings theory. The theory of superstrings is only a mathematical theory joining the quantum gravitation with the gauge theory of elementary particles and having no physical model. Such criticism from the known expert in this area indicates serious problems for modern state of the gravitation theory.

My personal attitude to any theory, having no physical model, is extremely negative, since such theory can restrict the fantasy within

the rigid frameworks. It is quite another matter, to find the only possible and correct model is not easy. It is the chain of completely casual events and coincidences. For all mankind it is inessential to know who has made the scientific discovery. It is important only for experts.

The EQS theory predicts the vigorous development for quantum theory. The uniform theory of field is created by introducing a joining particle (the quantum of space, i. e. the quanton) in theoretical physics. The discovery of the spatial quantum alongside with the known radiation quantum allows to recreate the absolutely different picture of physical world.

The wave equation of Schrodinger, the wave function and the wave mechanics have been possible owing to the elastic properties for quantized medium as an electromagnetic vacuum field. Following to the principle of corpuscle-wave dualism the elementary particles have become the main component for the vacuum field. The EQS theory translates a plane of elementary particle study on the area of their individual quantum properties and statistics.

Doubtlessly, the theory EQS develops essentially other quantum theory of gravitation for elementary particles, quantum mechanics and electrodynamics.

But main, the EQS theory gives rise to the development of essentially new power technologies, based on the elementary particles synthesis in vacuum field. In the near future these technologies will be a serious alternative to uranium-fuel-based ones [16-18].

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FOUR REPORTS

ON THE THEORY OF ELASTIC QUANTIZED SPACE (EQS)

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L 47 Four reports on the theory of elastic quantized space (EQS). (Proceedings of the Sixth International Conference «Modern Problems of Natural Sciences », August 21-25, 2000, St.-Petersburg, Russia)

The theory of elastic quantizedoй space (medium) (EQS) is the first informal theory of electromagnetic structure of vacuum (to be exact, of vacuum field). In the basis of the theory EQS there is an electromagnetic quantum of space (quanton) discovered on January 1996. In the same year the first part of the theory EQS has been published (in 1997 - the second: «New Sources of Energy»).

Now the third part of the theory EQS «Synergetics of uniform vacuum field » is prepared for publication, the part of materials from which has been stated in the «Four reports»:

1. **Role of superstrong interactions at synthesis of elementary particles.**
2. **"Relativism" as a special case of Newton's classical mechanics.**
3. **Spherical invariance at the development of absolute cosmological model.**
4. **Benefit and harm of relativism for fundamental science.**

In essence the «Four reports» are an incomplete summary of the third part of the theory EQS, which represents the informal uniform theory of field. The joining particle (quanton) in structure of continuous elastic quantized medium (vacuum field) is an uniting criterion in the uniform theory. Joining both electricity and magnetism into electromagnetism and gravitation, the quanton is a realistic carrier of the electromagnetic field. Joining space and time the quanton is a carrier of time. The vacuum fields is a medium from that the elementary particles are synthesized and which joins the known fundamental interactions. The interaction of quantons inside vacuum field is the fifth type of superstrong joining fundamental interactions.

The theory EQS discoveries the enormous prospects in development of new power ecologically clean technologies based on production of excessive energy resulted from synthesis of elementary particles from the vacuum field. It is confirmed experimentally.

The author of the theory of elastic quantized space (medium) (EQS), the winner of the premium of Government of Russian Federation in the branch of science and engineering, the valid member of International academy of ecology (IAE), the candidate of engineering science Vladimir Leonov, who has discovered the elementary quantum of space - quanton in 1996, works in the field of development of quantum theory and its practical application in the newest power technologies, the opponent of construction NPS with reactors on uranium fuel as ecologically and economically unpromising.

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