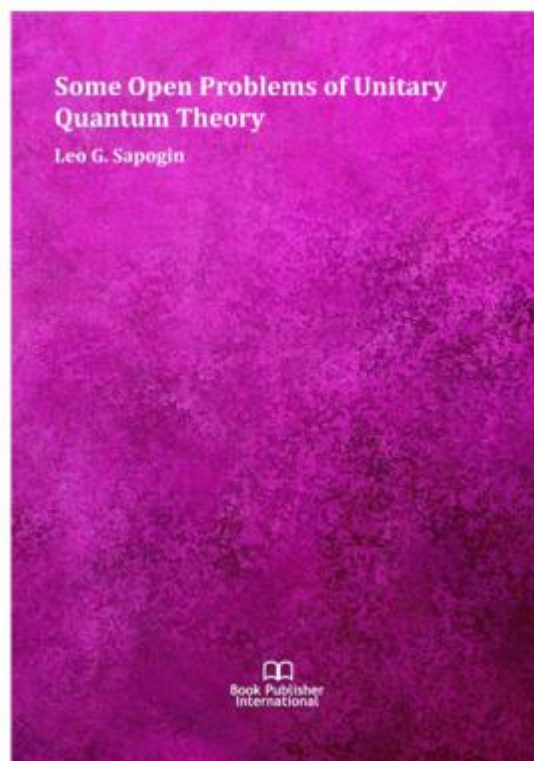


# **Some Open Problems of Unitary Quantum Theory**



**India ■ United Kingdom**

  
**Book Publisher  
International**

## **Editor(s)**

**Leo G. Sapogin<sup>1\*</sup>**

<sup>1</sup>Department of Physics, Technical University (MADI), 64 Leningradsky pr., A-319, Moscow, 125319, Russia.

\*Corresponding author: E-mail: [sapogin@cnf.madi.ru](mailto:sapogin@cnf.madi.ru);

**FIRST EDITION 2020**

**ISBN 978-93-90431-41-0 (Print)**

**ISBN 978-93-90431-49-6 (eBook)**

**DOI: 10.9734/bpi/mono/978-93-90431-41-0**



# Contents

---

<b>Preface</b>	i
<b>Chapter 1</b> <b>General Picture of the World in XXI Century</b> Leo G. Sapogin, Vladimir A. Dzhanibekov and Yuri A. Ryabov	1-49
<b>Chapter 2</b> <b>Energy Problems 21 Century and Unitary Quantum Theory</b> Leo G. Sapogin, Vladimir A. Dzhanibekov and Yuri A. Ryabov	50-57
<b>Chapter 3</b> <b>A Discussion on the Charge and Mass of Particles in Unitary Quantum Theory</b> Leo G. Sapogin and V. A. Boichenko	58-63
<b>Chapter 4</b> <b>Advanced Study on the Mass Spectrum of Elementary Particles in Unitary Quantum Theory and Standard Model</b> Leo G. Sapogin and Yuri A. Ryabov	64-80
<b>Chapter 5</b> <b>Recent Study about the Conflicts between the Unitary Quantum Theory and the Special and General Relativity Theories</b> Leo G. Sapogin, Vladimir A. Dzhanibekov, M. A. Mokulsky, Yuri A. Ryabov, A. A. Kostin and V. I. Utchastkin	81-89
<b>Chapter 6</b> <b>Discussing If the Unitary Quantum Theory is Able to Change Civilization</b> Leo G. Sapogin, Vladimir A. Dzhanibekov, A. A. Kostin, M. A. Mokulsky, Yuri A. Ryabov and V. I. Utchastkin	90-98
<b>Chapter 7</b> <b>History, How it was (History of Unitary Quantum Theory Creation)</b> Leo G. Sapogin	99-108

---

## 1.12 THE LORENTZ TRANSFORMATIONS

*Everything went very well, until the Austrian General Headquarters interfered: the shells were taken to the rear, and the wounded to the front.*

Jaroslav Hasek,  
"The Good Soldier Schweik"

There is a statement in Special Theory of Relativity that affects the mankind like a sleep-inducing mantra-paradox: suppose there are two observers with rules and watches sitting in two objects and moving straight-line and with constant speed in direction to each other. Then from the 1st observer point of view the watch of the 2nd observer is slow because he is moving. But the 2nd observer can (?) stipulate that he is at rest and the 1st observer watch is slow. To find out which watch is slow indeed the observers should meet, but that will infringe the terms of inertia – constant and steady motion. The experiment shows the returning watch is slow and this time lag relates to the changes of the gravity potential. But if we return the rules their lengths will not be changed, and that is quite strange because both effects are closely associated.

We would like to show that this mantra is absolutely false. Imagine the 1st observer is sitting of the rain drop falling with the constant speed in the terrestrial gravitational field, while the 2nd observer is on the Earth. By this doubtful statement of Special Theory of Relativity the 1st observer can say that his drop is at rest and that the 2nd observer together with the Earth is flying towards him. If observers are not absolute idiots the first observer should ask the second about the source of such a great amount of kinetic energy. This statement can have a little sense only if the masses of the 1st and 2nd objects are equal. It was found that two counters detected particles at one moment – evident confirmation of phenomena under discussion. With other hand the special relativity is in fact Lorentz transformations (1904) derived by V. Vogt (1887) in the century before last. These transformations followed from the properties of Maxwell equations which are also proposed in the nineteenth century (1873). One of these equations connecting electrostatic field divergence and

electric charge (Gauss' law of flux), in fact is just another mathematical notation of Coulomb's law for point charges.

But today anybody knows that Coulomb's law is valid for fixed point charges only. It doesn't work for the frequently moving charges. Besides anybody knows that lasers beams are scattered in vacuum one over another, which is absolutely impossible in Maxwell equations. **That means that Maxwell equations are approximate** - and for the moving point charges experimental results essentially differs from the estimated ones in the case charges areas are overlapping. Few people think about the shocking nonsense of presenting in any course of physics of point charge electric field in the form of a certain sun with field lines symmetrically coming from the point. But electric field is a vector, and what for is it directed? The total sum of such vectors is null, isn't it?

There are no attempts to talk about, but such idealization is not correct. **We should note that Sir Isaac Newton did not use term of a point charge at all, but it s ridiculous to think that such simple idea had not come to him!** As for Einstein, he considered "*electron is a stranger in electrodynamics*". **Maxwell equations are not ultimate truth and so we should forget, disavow the common statement about relativist invariance requirement being obligatory permission for any future theory.**

To reassure severe critics we should note that UQT is relativistic invariant, it allows to obtain correct correlation between an energy and impulse, mass increases with a rate, as for relativistic invariance just follow of the fact that the envelope of moving packet is quiet in any (including non-inertial) reference systems. To be honest we should note that subwaves the particles consist of are relativistic abnormal, at the same time envelope of our wave packet being immovable in all coordinate-systems corresponds to of Lorentz transformations.

The success of Maxwell equations in description of the prior-quantum view of world was very impressing. Its correlation of the classical mechanics in forms of requirement to correspond Lorentz transformations was perfectly confirmed by the experiments that all these had resulted in unreasoned statement of Maxwell equations being an ultimate truth.

In this case we can say that effect of acceleration correlates with the changes of gravitational potential, while from General Relativity System point of view gravitation and inertia are the same.

Other reasons for this effect were later very carefully investigated by a follower of one of the authors (L.S.), Professor Yu.L.Ratis. (S.Korolev Samara State Aero-Space University), who formulated the modern spinor quantum electrodynamics from the UQT point of view:

1. Maxwell equations contain constant  $c$ , which is interpreted as phase velocity of a plane electromagnetic wave in the vacuum.
2. Michelson and Morley have never measured the dependence of the velocity of a plane electromagnetic wave in the vacuum on the reference system velocity as soon plane waves were mathematical abstraction and it was impossible to analyze their properties in the laboratory experiment in principle.
3. Electromagnetic waves cannot exist in vacuum by definition. A spatial domain where an electromagnetic wave is spreading is no longer a vacuum. Once electromagnetic field arises in some spatial region at the same moment, such domain acquires new characteristic, because it became a material media. And such media possesses special material attributes including power and impulse.
4. Since electromagnetic wave while coming through the abstract vacuum (the mathematical vacuum) transforms it in a material media (physical vacuum) it will interact with this media.
5. The result of the electromagnetic wave and physical vacuum interaction are compact wave packets, called photons.
6. The group velocity of the wave packet (photon) spreading in the media with the normal dispersion is always less its phase velocity.

All abovementioned allows making unambiguous conclusion: **the main difficulties of the modern relativistic quantum theory of the field arise from deeply fallacious presuppositions in its base. The reason for this tragic global error was a tripe substitution of ideas--velocity of electromagnetic wave packets 'c' being obtained in numerous experiments physics was adopted as constant 'c' appearing in Maxwell equations and Lorentz transformations. Such blind admiration of Maxwell and Einstein geniuses (authors in no case do not doubt in the genius of these persons) had led XX century physics up a blind alley. The way out was in the necessity of revision of the entire fundamental postulates underlying the modern physics. Exactly that was done by UQT [6-8,43,44,10,11].**

Some time ago CERN has conducted repeated experiments of the neutrino velocity measurement that appeared to be higher than velocity of the light. For UQT they were like a balm into the wounds. The administration of CERN renounced after sometimes these results considering them as the consequence of experimental errors. As far as the authors know, not all participants of this experiment agree to such renouncing. Besides, many astronomers detect superluminal velocities during observations of stars and galaxies [34]. In fact the movements in excess of the light velocity were discovered earlier by numerous groups of researches. Nearly everybody disbelieved it [34]. The importance of these experiments for UQT is settled in the article [25] where at the page 69 it is written that *this should be considered as direct experimental proof of UQT principle.*

Other ideas also exist [45]. For example, at «New Relativistic Paradoxes and Open Questions», by Florentin Smarandache, shows several paradoxes, inconsistencies, contradictions, and anomalies in the Theory of Relativity. According to the author, not all physical laws are the same in all inertial reference frames, and he gives several counter-examples.

He also supports superluminal speeds, and he considers that the speed of light in vacuum is variable depending on the moving reference frame. The author explains that the red shift and blue shift are not entirely due to the Doppler Effect, but also to the medium composition (i.e. its physical elements, fields, density, heterogeneity, properties, etc.). Professor Smarandache considers that the space is not curved and the light near massive cosmic bodies bends not because of the gravity only as the General Theory of Relativity asserts (Gravitational Lensing), but because of the Medium Lensing. In order to make the distinction between "clock" and "time", he suggests a first experiment with a different clock type for the GPS clocks, for proving that the resulted dilation and contraction factors are different from those obtained with the cesium atomic clock; and a second experiment with different medium compositions for proving that different degrees of red shifts/blue shifts would result. To regret, the authors today have no decisive position to these complicate questions.

Note, this question is terribly complicate and probably is to be leaved to next generations. From one side, the time in UQT exists, so to say, in our head only. From other side, the Lorenz Transformations describe correctly some experimental facts, for example, the mass growing with velocity. Otherwise, all atomic accelerators would be out of order. Thereafter, it is a big mistake to consider all Special Relativity Theory as erroneous. The attitude to the Special Relativity Theory is today highly vague and may be compared in full with the discussion among painters about significance of the Malevich picture "*The black square*". Curiosity from the side the Special Relativity Theory declares that the spreading velocity of the information and of the signals cannot exceed the light velocity. At the same time today it is well known that the gravity interaction spreads with the velocity exceeding many times the light velocity. Laplace [22,46] has obtained corresponding estimates long ago. But this problem is not discussed in any way in Special Relativity. Over a hundred years passed since the special theory of relativity had been formed. Nowadays it is thought to be absolutely correct, although it was hardly criticized in different countries, and something like medieval inquisition even took place in the USSR and then in the Russian Academy of Sciences in response to the theory. To illustrate the methods of judgment, we cite a paragraph from an article by Academician E. Lifschits published in "Literaturnaya Gazeta", No 24, 1978, where he publicly claimed a paranoiac everyone who dared to criticize the theory of relativity: *"I see two types of scientists. Some of them are persons with paranoid psychic deviations... Not swindlers in science but simply not quite normal mentally... They*

*are generally engaged in fundamental problems and deny quantum physics, the theory of relativity etc..."*

And all this took place in spite of the fact that by the time this accusation was published Academician E Lifschitz had been well familiar with a large heap of scientific facts proving the absurdity of what he considered "the theory of relativity". He was also well familiar with those methods of organized political violence employed for implementing this "greatest theory" into practice. And there came the result: *"... during the year of 1966 only, the department of general and applied physics of RAS USSR helped medical specialists to identify' twenty four paranoiaks "* thus entrusting the Academy with the witch-hunting functions for stamping out dissent in physics.

However, numerous honest and courageous scientists do exist in Russia and in the world, for instance. Prof. V. Krasnoyarov, Doctor of Philosophy [47,48], who wrote as follows: *"With all due respect to the scientific community, one cannot get rid of the thought that it has been mislead (for non-scientific reasons ) and was forced to wear the fool's hat of relativism. We feel painful and humiliated but science must pass a hard path of its purification."*

**Biography of author(s)**



**Leo G. Sapogin**

Department of Physics, Technical University (MADI), 64 Leningradsky pr., A-319, Moscow, 125319, Russia.

He was born on October 22, 1936 in Orel City, Russia; married on Dr. of Medicine Natsouk Vera; Father of Anastasiya (1977), Grandfather of Sonya Gol'tsova (1999). He is now lives in Moscow, Russia. He began in 1954 to study in Taganrog Radio-technical University and graduated (Dept. of solid state physics) in 1959. He served during his military service from 1959 to 1972 at Ministry of Defence as the scientific adviser and Candidate of science (1966). He maintained (1971) the doctor degree in Leningrad State University. In 1972 to 1985, he was the Head of Theoretical Department in Russia Academy of Science. Since 1985 till present he is the Head of Physical Department of Technical University – MADI (Moscow Auto and Highway Construction Inst.). He is the author (or coauthor) of numerous (over 200) published scientific articles, 4 books, school supplies. He obtained (with V. Boichenko), first, very important scientific result: calculating (with accuracy more 0.3%) of the electrical electron charge and of the fine structure constant  $-1/137$ . He published (2005) in USA and Russia (together with Prof. Yu.Ryabov and V. Boichenko) the book named “Unitary Quantum Theory and New Source of Energy”. Second edition see: <http://www.sciencepublishinggroup.com/book/B-978-1-940366-43-2>

Together with Ryabov, he calculated mass spectrum of elementary particles and mass bozon Higgs - 131.7 GeV. Professor L. Sapogin - academic of Russian Academy of Natural Science and World Academy of Complex Safety. He was honored with 7 medals and Orders. In addition to his interests in science and classical music, Professor L. Sapogin has an interest in mountaineering. During 1956-1996, he had more than 200 ascensions in Caucases, Tyan-Schan, Pamir and Alps. His biography is included in collection books of Who's Who in the World (2006), of International Biographic Centre, Cambridge (2009) and of American Biographical Inst. (2009).

---

© Copyright (2020): Author(s). The licensee is the publisher (Book Publisher International).

## **London Tarakeswar**

### **Registered offices**

India: Guest House Road, Street no - 1/6, Hooghly, West Bengal, PIN-712410, India, Corp. Firm  
Registration Number: L77527, Tele: +91 8617752708, Email: [director@bookpi.org](mailto:director@bookpi.org),

(Headquarters)

UK: Third Floor, 207 Regent Street, London, W1B 3HH, UK

Fax: +44 20-3031-1429 Email: [director@bookpi.org](mailto:director@bookpi.org),  
(Branch office)