

The Conflict between the Unitary Quantum Theory and the Special and General Relativity Theories

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Abstract: The authors discuss contradictions between the principal branches of the modern physical picture of the universe. Space and time have been shown in the Unitary Quantum Theory (UQT) not to be connected one with the other, unlike in the Special Theory of Relativity. In UQT, time becomes Newtonian again, and the growth of the particle's mass with growing speed proceeds from other considerations of physics. Unlike the quantum theory, the modern gravitation theory (the general theory of relativity) is not confirmed by experiments and needs to be considerably revised.

Keywords: Unitary, quantum, wave packet, mass spectrum, elementary particle, dispersion

1. Introduction

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 paranoiacs "* 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 [3], who wrote as follows: *" With all due respect to the scientific community, one cannot get rid of the thought that it has been misled (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. "*

2. The Special Theory of Relativity and UQT

The authors must accept it honestly that before the main

results concerning the Universal Quantum Theory were generated and published, they had not much doubted the conclusions drawn from the Lorentz transformations. The broad scientific community generally did give a hostile reception to the conclusions about time slowed down in a rapidly moving watch. This has not confused us till today, for the Lorentz transformations can be drawn from the light speed (electromagnetic waves) independence of the speeds of its source or the observer, which seems completely discouraging as far as common sense is concerned, and the slowing down of time and the length contraction of a ruler are simply an elementary consequence of this discouraging fact of experimentation. On the other hand, numerous experiments are performed today [4-6] that demonstrate speed changing of electromagnetic waves if watched by moving observers and sources but this fact has not been brought up for discussion.

Transformations of coordinates and time were first published by Voigt at the beginning of 1887 completed by Lorentz in 1904 and finally referred to as the Lorentz transformations. Poincare and Einstein, dissatisfied with the fact that the Newtonian mechanics was invariant relative to the Galilean transformations, came to the conclusion (1904-1905) that the equations of mechanics should be changed so as to be invariant relative to Lorentz transformations, which led, in mechanics, to mass growing with velocity. This was experimentally confirmed by Kaufmann (1902-1903). The Maxwell theory united various phenomena, previously dissipated, and the special theory of relativity started its triumphant march around the world.

Nobody was aware in these victorious years of the Coulomb law (the Gauss theorem as one of Maxwell's equations) being only true for charges stationary with respect to each other. Besides, as was experimentally shown later, scattering of electromagnetic waves one on another took place in vacuum and could not be described by Maxwell's equations since they are linear. Nobody approached this problem once again, although it is absolutely clear today that electrodynamics is not a theory of last resort and it does not seem reasonable to demand that any upcoming theory should be invariant relative to Lorentz transformations.

It should be mentioned that Maxwell's equations were initially written using quaternion formulation [1], the vectors E and B were employed later, but the initial equations contained the total time derivative. The equations were invariant with respect to Galileo's transformations and Lorentz's transformations had not even been planned. Then Hertz and Heaviside [2] introduced the vector and scalar potentials A and φ giving rise to non-homogeneous wave equations of second order, which was unknown in Maxwell's ignition formulation, and the total time derivative was replaced by the partial one. These equations were regarded as the final formulation of electrodynamics and are believed to require no changes. They are now considered as relativistically invariant but the invariance with regard to the Galilean transformations disappeared from them.

The theory of special relativity went to even greater lengths, and it was claimed, though for no good reason, that there were

no velocities larger than that of light, which allegedly invalidated the causality principle but was completely wrong in fact. The causality principle provides one of the general principles of physics establishing the permissible limits of the influence of physical events on one another; it allows no impact of a given event on all the events that have already occurred ("the cause event precedes the effect event in time" and "the future does not influence the past").

The relativist causality principle is even stronger as it also rules out the mutual influence of the events separated by a space-like interval; the notions of "earlier" or "later" are not absolute for them and they change over with the change of the reference frame. The mutual influence of these events would have been possible only with the frame of reference which includes the object travelling at a speed larger than the speed of light in the vacuum. The well-known opinion that superluminal motion is impossible as far as the relativity theory is concerned proceeds therefore from the relativist causality principle and this opinion can be repudiated.

Humanity forgot that nothing beside the Newtonian equations with some additional allowances for other factors is needed to describe the Solar System. If we take into consideration retarded gravitation potential changes in the space then, as was established by Laplace [7], the propagation rate of these changes will be 7000 as much as the speed of light. There is much evidence and experimentation at present showing speeds many times larger than the speed of light [33-35] discussed in the vast literature on the subject. It seems funny that faster-than-light neutrinos were first observed and then abandoned even in CERN (otherwise the relativity theory would have collapsed) under the pretext that the cable with glass fiber was badly attached (!). These studies in CERN involved a lot of researchers and as far as we know not all of them share the same opinion but they keep silent ... as submitted to the discipline.

Incidentally, faster-than-light neutrinos were observed in the supernova explosions [35] and the neutrinos were detected first and the optic explosion was noticed hours later. The problem of medium (aether), easily eliminated by the special relativity theory, is considered apart from its issues. The authors are not of the opinion that the aether as a medium of some particles does exist, and we believe that this most obscure problem of the present must be settled by the generations to come.

Nonetheless, some reproaching stones must be cast towards the relativity theory and electrodynamics. The Lorentz force does not proceed from Maxwell's equations but it is introduced to electrodynamics by hand! Besides, according to the apt remark made by Einstein himself that "the electron is a stranger in electrodynamics" and the true equations must not contain point charges or masses. Incidentally, Sir Isaac Newton never applied the concept of a material point and it is naive to imagine that such a simple idea never came into his mind.

One more irregularity concerning Lorentz's transformations seems to occur: they cannot be fully verified, for the moving watch or the ruler needs to be brought back for verification,

which contradicts the condition of the inertia property. Experimentation shows that those watches were slow which returned back for they underwent acceleration... It seems curious that in the paradox of the rulers (which is directly connected with time deceleration) the moving ruler does not change its length after coming back... One must agree that this is very strange...

The solving of the Unitary Quantum Theory brought to light, quite unexpectedly for the authors, some consequences from the Lorentz transformations. It appeared that the principal relativistic correlation between energy and impulse was only correct after averaging. According to UQT, the particle-wave packet periodically appears and disappears when moving (gets smeared over the Mega Galaxy). If the particle is spread out it loses its mass and impulse although it retains its energy in the form of harmonic constituents and the relation

$$E^2 = p^2 c^2 + m^2 c^4 \quad (1)$$

comes out as the averaging.

The growth of particle's mass with its growing velocity is now governed by quite other reasons: when the forcing frequency of the moving particle's appearances and disappearances $\omega_B = \frac{mv^2}{h}$ approaches, due to dispersion, the natural frequency of the oscillations of the packet $\omega_S = \frac{mc^2}{h}$ and the general resonance with the packet's amplitude growth occurs when $v \rightarrow c$, then mass growth takes place. The standard graph of the dependence of the particle's mass on its speed is now simply half the amplitude-frequency characteristic of the forced oscillations of a harmonic oscillator with no dissipation, and the mass growth is absolute. One may ask us: respective to what medium is the particle moving if you have not yet maintained it till now? Once again we shall honestly answer that we do not know it, and that we do not like the idea of aether. If aether is the medium then we do not understand why its influence is nor expressed either in the laws of motion in the Solar System or in the spectrum of the hydrogen atom and why the motion about it is almost imperceptible.

It seems to us that the gravitation field creates something like the stage or the boards in a theatre where all the processes of the Universe are acted. Time is not accelerated nor decelerated in different reference frames, but the rates of all processes are simply equally changed under the effect of the changing gravitation potential because the mass changes. If an operating watch arrives back it is slow as it have undergone acceleration, which is equivalent to the changing of the gravitational potential. Gravitation and inertia are one and the same thing and this is one of the most profound physical ideas of the General Theory of Relativity. To elucidate this is the task of the generations to come.

According to UQT, multi-particle production after the collision of high-energy particles (with a large amplitude of the packet) with some periodical structure of another particle is simply the diffraction process of the interaction of non-linear waves one on another, and the jets of the resulting particles are diffraction maxima. The relativity principle is

abandoned in UQT but the relativistic correlation (1) takes place in averaging. It appeared, when solving UQT non-linear integro-differential equations, both relativistic and non-relativistic, that in both the evaluation of the permanent fine structure [21,22,27] and the mass spectra calculation of [26,28-30] of many elementary particles - the solution had to be sought for in the inherent system, and time as a parameter tightly connected with space was completely disregarded in the analysis. No fundamental constants, except for π and e , were made use of.

So time is regarded here as purely Newtonian and it only exists in our mind, and the requirement of relativistic invariance seems to be a hundred-year long illusion of man. The world is not solely electromagnetic waves. Incidentally, UQT have settled up the problem of reversibility: it now does not exist in the Unitary Quantum Theory [29, 30, 37] and the direction of the time arrow is determined by entropy.

Unfortunately, thousands of years of science and philosophy progress have led humanity back to Saint Augustine's words *"If nobody asks me I know what time is, but if I am asked then I am at a loss what to say"*.

3. The Theory of Gravitation (the General Theory of Relativity) and UQT

The situation in GTR (the gravitation theory) is even more scandalous. The Authors do not regard themselves as the coryphées in the fields of Rumen's geometry and tensor analysis; nevertheless they are quite confident that GTR by all means bears most profound ideas of physics that will undoubtedly retain in the future theory of gravitation. But, in fact, the conception of the dependence of space properties on the distribution and motion of masses was for the first time put forward and developed by Jacobi in ... 1848. Then this conception was further expanded in the works of a whole plead of such physicists as Lipke, Bcrwald, Frank, Eizerhard [33]. Nowadays we understand that the spectrum of masses [27-30] and the fine structure constant [21, 22, 27] owe their appearance only to geometry and to the properties of space.

The fact that any motion is regarded as absolute in UQT is highly positive for this theory, as was for the first time noted by Academician A.D. Alexandrov [10] at the All-Union Conference "Space and Time in Modern Physics" in 1959. He said that *"our issue is particularly about a mathematical theorem and, therefore, the statement that the theory is based on 'the general relativity principle' (whose senselessness was admitted by Einstein as far back as in 1916) is equal to someone's allegation that 'the Einstein theory relies on the general law according to which 2x2=5... Therefore, GTR rather does eliminate the relativity of motion than extends it from inertia I motions to any accelerated ones"* [10].

Still many leading scientists, both in Russia and abroad, definitely deny GTR at all. The President of the American Physical Society and the Nobel Prize Winner Prof. E. Wigner stated as a well-approved fact that *"such fundamental physical*

concepts as a coordinate and an impulse, which might be assigned any random initial values, do not bear any physical sense within the frame of GTR ".

Vice-President of the Russian Academy of Scientists Acad. A.A.Logunov [14] proves that no physical sense is borne by such fundamental physical value as mass within the frame of GTR. Moreover, he wrote unambiguously [11] that *"the energy-impulse tensor in the Einstein theory - has the same relation to physics as does the last-year snow to the mystery of the Tunguska Event"*. When speaking to the UNESCO session in March 1986, Acad. A.Logunov suggested that some special international agreement should be created for expelling GRT from research as one having nothing to do with natural sciences. His article in a magazine ("Tekhnika Molodezhi", No 10, 1986) carries his opinion that *"the energy-impulse vector is always equal to zero in GRT and GRT no concept of energy can be found there"*.

Theory will be entirely useless if not supported by appropriate experimentation. As regards the quantum science, theory and experiment in it show coincidence with an accuracy of 6 to 9 significant figures. Unfortunately, GRT cannot boast such coincidence. We shall briefly analyze main direct experimental confirmations of the theory. Three of those are the most important. The other ones can be liable to another classical interpretation.

1.The deviation of a star beam in the Sun's gravitational field during solar eclipse. GRT predicts a 1.75" deviation of the stellar beam whereas the Newtonian theory stands for a value two times as small. The Sun has an immense plasma cloud over its surface, which also deflects the light and this deflection is tens of times larger than the predicted effect is. The plasma cloud's parameters are unknown and surely similar predictions are made to achieve needed results. The same considerations work when quasar radio emissions in the Sun's field are measured.

2.Expansion of the Universe according to the Hubble law. The Hubble constant has changed by orders of magnitude since the observations started but all the time it corresponds to the theoretical predictions (!).

3.The motion of the perihelion of Mercury. It has been for long known in observational astronomy that owing to other planets' gravitation Mercury's motion is not simply elliptic but the planet travels along an ellipse that rotates for 575" every hundred years. Corrections based on the Newtonian theory make it to be 532". The remaining value 43" cannot be interpreted within the frame of the Newtonian theory.

Not exactly... It takes the Sun about 30 days to make a full rotation on its axis.... That is why it is a bit oblate (like the Earth)... Then the Sun's gravitational field will rely on the angle (with no spherical symmetry), and Mercury's trajectory will certainly make a turn... We do not insist that this deviation will be 43" but it will of course exist. To solve the problem correctly, one needs to know what the Sun's polar and equatorial radius, which have never been measured and no one knows the way to measure them... Everybody keeps silent about this fact for 43" is considered to be excellently accounted for in terms of GRT...

Not long ago the situation grew absolutely scandalous... The collection of articles "Unsolved Problems in Special and General Relativity " (Chief Editor Florentin Smarandach, USA) might be referred to as a requiem for the Special and General Relativity theories. The authors are an American, a Russian, the rest are the Chinese. All of them cannot be called engaged persons. The first article of the Collection, "Einstein's Explanation of Perihelion Motion of Mercury", is by Chinese mathematician Hua Di [36, p. 5]. The author pointed to a rude mistake made by Einstein when calculating the error of 43" by way of integration, and the result must have been not 43" but 71.5". We were so astonished that rushed to make sure whether it was so. Sad to say this, but we all had the same result 71.5". And what did surprise us mostly was the fact that not only Einstein but the authors of many articles and books had stupidly reproduced these calculations, challenging us to think seriously about the situation just like Prof. Krasnoyarov did (see Introduction).

To draw a final line in the discussion about the experimental substantiation of the General Relativity Theory (GRT), let us cite the conclusion of French scientist L.Brillouin [9] who left to us his unambiguous estimation: *"The conclusion is that no experimental facts exist that would confirm the mathematically cumbersome theory by Einstein. Everything done after Einstein provides mathematically complicated generalizations, additions or modifications not supported by experimentation. Science fiction in the area of cosmology is, frankly speaking, a very interesting but hypothetical thing. "*

4. Conclusion

The above-laid considerations reflect a completely dismal general physical picture of the world. If this picture is further accepted in the scientific community, then many countries will continue wasting their time and money in empty projects like the International Reactor for Thermonuclear Synthesis, ITER, LI IC and the like. The now existing army of "brothers talc-tellers" will depict for us more and more fantastic physical scenarios. Amazed people will listen to these breathtaking stories about parallel universes, worm holes, the teleportation of large objects, travelling in time, horizontal events and any other stuff like this, and demand more and more money from their Governments for putting up new shows. Leaders of states must remember that *"the viability of any idea is determined by the quantity of people feeding on it"*. We are confident that in reality our world is not like this [37].

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