

Back to James Maxell's and Nikola Tesla vision about space

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Abstract The vision of recognized famous physicists about the space has been different from the currently adopted one. James Maxwell, the founder of modern electrodynamics, has been a rigorous supporter of the Ether concept. Albert Einstein did not agree with the formulation of the Quantum mechanics in 1925 and especially the concept about the physical vacuum. Number of experiments and observations now indicate that the physical vacuum may not be a void space but containing a superfine structure in which case it must have two states: a steady state and a transient one. The original form of the Maxwell's equations is different than the later tailored vectors form, so the latter case may describe only the steady state of the physical vacuum. A hundred years ago, Nikola Tesla, having the Maxwell's vision about the space, claimed a successful energy transmission that is unexplainable by the Modern physics. Recently a team of Russian scientists reported, 20 kW energy transmission by 80 micron wire using the Tesla method. One alternative concept about the physical vacuum suggested in the recently published Basic Structures of Matter theory may serve as a fundamental base for analysis of this kind of experiments from a different point of view.

Today, the academicians of Modern Physics try to imply that James Maxwell's electromagnetic theory is not based upon the Ether. From his original publications, however, it is clear that Maxell has been a strong supporter of the Ether concept and rigorous attacker of those who ignores this objectivity [1] (see article four, section: Maxwell supports Ether). In **A Treatise on Electricity and Magnetism vol. II** [2] James Maxwell concludes on the last page in favor of the Ether:

".....whenever energy is transmitted from one body to another in time, there must be a medium or substance in which the energy exists after it leaves one body and before it reaches the other"

Attacking the opponents of his concept Maxwell say: **My further researches lead me to find that these 'eminent men' who take upon themselves the task of ignoring anything that contradicts their cherished beliefs, follow what is called Scientism. And Scientism is well known by some people as a corruption of Science that is really a 'pseudo religion.' With so many 'eminent men' following their religion of Scientism and pretending it to be Science, it is little wonder that the world is in a very 'sorry state' of affairs.**

The acceptance of Ether existence automatically leads to the conclusion that it should possess **two kinds of features: steady state and transient one**. The Maxwell's belief about the existence of Ether is a riddle for the physicists now. Could it be a Maxwell's delusion? It becomes apparent now that it is not. His original equations defined for 20 field variables have been formulated in quaternion form (see A. Waser [3]). Later Oliver Heaviside and William Gibbs have transformed them into vector forms that have not been recommended by Maxwell. This is the today's known form of the Maxwell's equations. Recently K. J. van Vlaenderen and A. Waser in the article "Electrodynamics with scalar field" [4] show that the electrodynamics can be efficiently formulated in biquaternion form in which the original Maxwell's concept is preserved. The major profit from this is the prediction of the existence of longitudinal

electrosalar waves in vacuum. Such waves has been experimentally observed firstly by Nikola Tesla and recently confirmed by experiments.

The price for tailoring the Maxwell's equations to the known today vector form could be the exclusion of the transient state properties of the vacuum. That's why some physical phenomena may look like paradoxes and some experiments seem to contradict to the "laws of physics". In other words the transient state of the vacuum is outside of the filed of view of the Modern physics today. It stands to reason that the dark matter whose signature is now observable in all galaxies [11,12] is in fact an underlying superfine structure of the space we live.

In the most of the standard physics textbooks it is written that Einstein disproved the Ether (aether), when it talks about the Michelson Morley experiment. However, if you look at the book: Sidelights on Relativity - **Einstein says he did not disprove the ether, just showed that one version of it was wrong** [5]. Really the "ether" concept evolved in General relativity and becoming a "space-time." But that interpretation gets lost in confusion as people try to think from the formulated postulates in Quantum Mechanics. As a result the General relativity gets interpretation different than the original concept. **In fact Einstein did not agree with the 1925 theory of Quantum Mechanics** [1,5,6]. Today physicists are taught that the 'ether' concept is part of history. In fact, in the Modern physics the natural media or "ether" is replaced by some of its attributes, such as: quantum fluctuations of the physical vacuum, zero-point energy, space-time metrics and other names [1]. **Now the Modern physics is deprived to solve the paradox: studying the properties of the physical vacuum while ignoring the existence of the carrier of these properties.** Such approach led to development of abstractive theories where the human logic fails. While this has been opposed by some open minded scientists in the beginning of the 20th century, now the replacement of the human logic by mathematical one is silently acceptable.

Today, the orthodox wing of the physics community rigorously opposes any revision of the formulation of the Quantum mechanics in 1925, creating in such way a barrier that restricts the research of the transient phenomena. In a desire to provide explanations without departure from the officially adopted concept, some physicists propose non realistic theories based only on mathematical logic (multidimensional space, time reversal, worm holes, black holes ecaporation, parallel universes, overusing of the uncertainty principle and so on). This leads to a fallacy and ambiguity. In this aspect the article "The Greatest Math Error, by Dave Pressler, reported in international meeting and published in Journal of Theoretics appears very useful [7]

One of the greatest discoverers Nikola Tesla undoubtedly could be considered as a pioneer researcher of the transient properties of the natural medium – the physical vacuum. Being closer to the experiments, than to the abstractive theories, he always referenced the space (a physical vacuum) as a Natural Medium. He unveiled experimentally some of the hidden properties of the space. His experiments, not understood by the modern physics, now are labeled as "exotic". Despite the fact that Nicola Tesla has been the greatest inventor contributing to the industrial boom of the beginning of the 20th century, he considers himself mostly a discoverer than an inventor. The discovered by him Radian energy in fact is a phenomenon belonging to the transient state of the space (physical vacuum). This discovery is so significant, that it could be compared with the electromagnetic induction discovered by Michael Faraday. This kind of achievement and the theoretical vision of Nikola Tesla are dismissed by the contemporary modern physics today, because they **do not match to some postulates in the 1925 formulation**

of the Quantum Mechanics. That's why he did not obtain the credit he deserves from the physics community today.

Some researchers now succeeded to replicate some of the Tesla experiments getting similar results. Presently, one may find quite rich information about such experiments by Internet sources, than in the pages of the officially supported journals. While skeptics prefer to close their eyes for such information, it is quite useful for open mind thinkers.

A team of scientists from a Russian scientific institution (D. S. Strebkov et al) has rediscovered the method of the single wire energy transmission based on the Tesla discoveries 100 years ago. Their experimental results are published in two articles [8,9] in a New Energy Technology magazine. The abstract of the article "Investigation of 20 kW, 6.8 kV, 80 mkm Single-Wire Electric Power System" [8] says:

"20 kW, 6.8 kV, diameter 80 mkm (micron), 6 m long electric power transmission line was tested. There was demonstrated appearance of specific current density 600 A/mm² and specific electric power density 4 MW/mm² without overheating of copper single-wire line of 80 mkm diameter".

In the text description of the second paper [9] by the same authors, "New Results of Development and Testing of Single-Wire Electric Power System", it is written:

"The equipment comprised Tesla transformers, which were connected to the line with two resonant circuits, and adjusted to the resonant frequency f_0 , where $100\text{Hz} < f_0 < 100\text{kHz}$. Placed in the beginning of a line the resonant circuit consists of the primary winding, the step-up high frequency Tesla transformer and condensers battery, which were connected in parallel to the primary winding. The parallel resonant circuit was connected to the static frequency converter. As a load there were used 24 filament lamps (220 V, 1 kW) that were arranged in 12 parallel groups, each consisted of 2 connected in series lamps. The lamps were connected to a step-down Tesla transformer through a 400 V/25 kW bridge rectifier."

Based on provided experiments the Russian team claims that a technology is developed allowing them to obtain six patents. For the priory art only the Tesla patent "Apparatus for transmission of electrical energy [10] is cited.

The newly developed unified theory Basic Structures of Matter [13,14], based on an alternative vacuum concept, agrees in full with the Maxwell and Tesla's vision about the space. It suggests quite successful original model of the underlying structure of the physical vacuum giving a fundamental bases for analysis of physical phenomena in both states of the space, the steady state and the transient one.

Discussion: Presently, the official peer review journals currently do not accept an open discussion about such important topic as the space-time fabrics (physical vacuum). Any attempt for challenging the status quo usually is marked as a speculation. In the time of Internet, however, the distribution of scientific information could not be restricted. Independent peer review journals have been formed. They provide fast and credible information for the researchers. Such journals or data bases for examples are: the Journal of Theoretics [15], the

New Energy technologies magazine [16], the data base of the Institute of New Energy [17] the Keely net data base [18] and many other sources. Presently, some experiments, related to the zero point vacuum energy, are provided by independent private organizations and researchers. Without a credible physical theory, the experimenters usually work in a darkness following some intuition. At such conditions and lack of funding, the successful results are very rare. But even in a successful experiment the skeptics claim that the results contradict to the laws of Physics. This does not mean automatically a contradiction to the laws of Nature, because some present law of physics may occur to be incomplete due to an error of adopted vacuum concept.

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