the general science journal

PRESERVATION THE FORM OF LAWS – PRINCIPLE OF SIMILARITY

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Abstract

The Lorentz transformations have a solution different from that of the Special theory. On this basis, without pre-requisites, follows the conclusion: **L'=L/b** ; **t'=t/b** ; **m'=m_r/b** – moving viewpoint **K'**; **L=L'.b** ; **t=t'.b** ; **m=m_r'.b** – stationary viewpoint **K** (**b=(1-v^2/c^2)$^{1/2}$**). These dependences suggest that between the systems **K** and **K'** is in force similarity – Principle of similarity (Principle of difference in proportion). According to them, with increasing the velocity **v**, **kilogram K'** decreases, from where are decreasing **meter K'** and **second K'** in the same degre. Here it is obligatory to test them for compatibility with "condition for preservation the form of laws". The result of the check is positive (in similarity all proportions (laws) are preserved). To the same test conclusions of the Theory fail, which is expected. Suffice it to mention only its monstrously outrage over reason with "the infinitely big mass in zero length" and the mathematical absurdity: in **dx'/dt'** – **dx'** (meter **K'**) tends to zero, **dt'** (second **K'**) tends to infinity.

EXPOSITION

An indisputable fact is that the World is organized on the Principle of opposites. In this way was formed and the condition as: "Inertial system **K'** moves towards a stationary system **K** with velocity **v** along the axes **X'=X** ". Be assumed a priori that this opposition is simulated, there is not a scientific approach. Because only thanks to him is reaches to the Lorentz transformations. Because without this polarity (with text "systems **K** and **K'** are moving relative to each other ...") cannot be compiled equations, the mathematics does not work. For clarity of the upcoming analysis will point out still two important reasons:

1) The mass **m_c** of the bodies is permanent quantity – does not depend on any conditions. [1] But it consists of a potential component **m_p=m_c.b** (the length **L** and the time **t** are its attributes; **b=(1-v^2/c^2)$^{1/2}$** , **m_c'=m_c**) and a reverse kinetic **$m_к$**, both dependent on the speed – **m_c=m_p+$m_к$**=const. (dualism is everywhere; where "is missing" the things are not in order).

2) The Lorentz transformations have a solution different from that of the Theory. [2]

On this basis, without prerequisites, follows the conclusion:

L'=L/b ; **t'=t/b** ; **m'=m_r/b** – viewpoint **K'** (1)

L=L'.b ; **t=t'.b** ; **m=m_r'.b** – viewpoint **K** (2)

The combination equations (1)-(2) suggest that between the systems **K** and **K'** is in force similarity (Principle of similarity or Principle of difference in proportion). According to (2), with increasing the velocity **v**, **kilogram K'** decreases, from where are decreasing **meter K'** and **second K'** in the same

degre. The scale of system **K** do not change – there is missing a reason for it. But they seem growing, according to (1), as a mirror effect from decreasing of the scale **K'** (dependences (1)-(2) are confirmed by experiments on Michelson-Morley, Tolman-Lewis and others).

Now we will quote the article from 1905 years (A. Einstein – On the Electrodynamics of Moving Bodies, part 1, §2, http://www.fourmilab.ch/etexts/einstein/specrel/www/):

> The laws by which the states of physical systems undergo change are not affected, whether these changes of state be referred to the one or the other of two systems of co-ordinates in uniform translatory motion.

In the veracity of this situation, there can be no doubt. It understands itself. Otherwise, what reality would have been one in which each system has its own laws?! Only, as it is known, the author moistures in the quoted text meaning of the valid Principle of absolute relativity (identity) in systems and assigns on the last the role of Postulate (first), which an outside experimentally enterprise is questionable.

It is clear that dependences (1)-(2) must meet unconditionally of the cited requirement. That is, it is obligatory to test them for compatibility with "condition for preservation the form of laws". The check will do with the law of the gravitational pull. For this purpose, we build the following treatment: Inertial platform (system **K'**) moves on rails with velocity **v** towards the stationary Earth (system **K**). The rails are the axes **X'=X**. There is an appliance with masses $\mathbf{m_1}$ and $\mathbf{m_2}$ on the platform whose distance **R** between the centers is parallel to the axes **X'=X**, ergo, to the direction of movement. Let the force of attraction between the masses gives an indication unit on the screen of the appliance.

Check the conclusions of Similarity of experience, positioned in **K'** (on the platform).

Observation in **K'**: $\mathbf{F'=G(m'_1.m'_2)/R'^2=1}$

Observation from **K**, according to (2): $\mathbf{F=G(m'_1.b).(m'_2.b)/(R'^2.b^2)=G(m'_1.m'_2)/R'^2=F'=1}$

Results: In both systems the law is the same (keeps its shape).

Now we transfer the appliance onto the stationary Earth under the same conditions.

Check the conclusions of Similarity of experience, positioned in **K** (on the Earth).

Observation in **K**: $\mathbf{F=G(m_1.m_2)/R^2=1}$

Observation from **K'**, according to (1): $\mathbf{F'=G(m_1/b).(m_2/b)/(R^2/b^2)=G(m_1.m_2)/R^2=F=1}$

Result: Again, in both systems the law is the same (keeps its shape).

(to the same test conclusions of the Theory fail, which is expected; suffice it to mention only its monstrously outrage over reason with "the infinitely big mass in zero length" and the mathematical absurdity: in **dx'/dt'** – **dx'** (meter **K'**) tends to zero, **dt'** (second **K'**) tends to infinity.

Actually, this outcome was clear without testing – we know that in similarity all proportions (laws) are preserved. In this connection, pay attention to the fact that Planck's law **E=hf** (**h** – const., **f** – frequency, respectively, **f=n/t** – number of oscillations **n** per unit of time **t**), does not cover the

"condition for preservation the form of laws ", namely: with **E'=hn/t'** in **K'**, we have **E=hn/(t'.b)** in **K** and vice versa – with **E=h.n/t** in **K**, we have **E'=h.n/(t/b)** в **K'**. I.e., the preservation does not happen. Then should suppose that the law in question is wrong? Its precise form is achieved with correction or so **E/t=hn/t**, or so **E=hn**. But this means that not the energy **E**, and the power **E/t** is proportional to the frequency **f**, for the periodic processes (**E** never anywhere does not depend on **t**). [3] And so:

a) Preservation the form of laws – this is a Natural law.

b) Through no law can be found the inertial motion – this is a Natural law.

c) In no way can detect the inertial motion – this is an assertion which 1), 2), a) and b) disprove (it is in force only for isolated laboratory).

Reference

[1] Николов А. – Към смяна на идеите във философията и физиката, София, 1999, стр. 311-334.

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(Nikolov A. – To change of ideas in philosophy and physics, S., 1999, p. 311-334).

(Removing the make-up (11), (12) of the Special theory – http://alniko.log.bg/).

[2] Nikolov A. – Working out of the Lorentz transformations from the Michelson-Morley experiment (May 24, 2011) – http://gsjournal.net/Science-Journals/Research%20Papers-Relativity%20Theory/Download/3488
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[3] Nikolov A. – Essence of Planck´s Constant (April 19, 2011) – http://gsjournal.net/Science-Journals/Research%20Papers-Mechanics%20/%20Electrodynamics/Download/2251