Journal of Theoretics *Vol.4-6*

"Einstein Reconsidered" (Re: an *Infinite Energy* Discussion)

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Abstract: An opinion is expressed that special relativity would be named the Lorentz-Poincare-Einstein-Minkowski relativity theory. It is noted again that these two known conclusions of general relativity contradict the results of experiments with atomic clocks and each other.
Keywords: special relativity, general relativity, Lorentz, Poincare, Einstein, Minkowski, Infinite Energy.

Two special issues of *Infinite Energy* #38 and #39 - "Einstein Reconsidered" are of indubitable interest. The article [1], where the doubtfulness of the results of the known experiment on the measurement of light bending in the gravitation field of the Sun is shown, should be particularly marked.

One often says about 'Einstein's relativity theories'. As to general relativity (GR), one can agree with this title although the contributions of M.Grossmann at the initial stage of GR construction and D.Gilbert at the final stage of field equation finding, are often ignore completely. Now to the point. Side by side, with the aforesaid fact, it has turned out quite recently that the two known conclusions of GR contradict the results of experiments with atomic clocks and each other. According to GR, the light frequency remains (owing to ascribing the gravitational potential energy to the photon) invariable at its radiation in a gravitational field, however the observed gravitational slowing-down of an atomic clock (the quantum standards of frequency are its base) witnesses the opposite.[2] The frequency of the corresponding atomic transition actually decreases in a gravitational field. On the other hand, according to the GR (Schwarzschild's solution), gravitational time dilation takes place. This contradicts the direct slowing-down of the atomic clock rate.[3] What is more, as one can see from an example of the atomic clock construction, the considered GR conclusions also contradict each other. Besides, as it has quite recently appeared [4], the gravitational repulsion (unobserved in nature) is a GR consequence.

Special relativity would be named the Lorentz-Poincare-Einstein-Minkowski relativity theory (RT). The contribution of the latter to the final mathematical formulation of the RT should be marked. Recall that the united space-time of RT was named the Minkowski 4D-space. Its covariant equation for energy $E=m\gamma c^2$ allow one to ascertain that mass m is a Lorentzian invariant (the Lorentz-factor $\gamma=(1-v^2/c^2)^{-1/2}$ increases with velocity v). By definition, this invariant does not change its value when going from rest to movement (the mass of a moving body is equal to that of a body at rest). The Lorentz transformation describes this transition mathematically. As a result, a modest role of the energy of resting bodies only ($\gamma=1$) is left for the famous formula $E=mc^2$. However, just based on it, Einstein draws a conclusion that the mass E/c^2 corresponds to each energy E?! This erroneous law of energy inertia underlines the GR construction. In particular, a light beam carries the energy, having mass, and so it will be bent in a gravitational field.[5]

Remark that Minkowski's covariant equation removes one of the two deep RT "flaws". The concept of covariant (radar) length [6] allows one to eliminate the second difficulty. This difficulty is presented by the known Lewis-Tolman paradox of lever, "4/3 problem", a charge appearance in a moving neutral current-carrying conductor and so on. Recall that the elongation equation of longitudinal sizes of moving objects is the consequence of this concept. It replaces the previous (non-covariant) Lorentz contraction formula obtained in the past century to explain the Michelson-Morley experiment in ether theory.

Conclusion: The difficulties and paradoxes of special relativity disappeared when covariant quantities (e.g., radar length instead of contracted one, Minkowski's equation instead of $E=mc^2$) are used. At the same time, the two general relativity conclusions (gravitational time dilation and the invariability of photon frequency at its emission in a gravitational field) contradict the experiments with atomic clocks as well as each other.

References

1. McCausland I, "Anomalies in the History of Relativity" *Infinite Energy*, **7**, #38; 2001, p19-28.
2. Strel'tsov VN, "Gravitational Time Dilation & General Relativity", *Apeiron*, **6**; 1999, p243-4.
3. Strel'tsov VN, "The End of General Relativity", *Galilean Electrodynamics*, **12**, Spec.Issue 1, 13; 2001.
4. Strel'tsov VN, "Relativistic Gravidynamics Conquers General Relativity", *J. of Theoretics*, **3**, #5; 2002. "General Relativity: Gravitational Repulsion", Ibid., **4**, #3.
5. Einstein A, Infeld L, **The Evolution of Physics**, Cambridge Univ.Press, London, 1938, p239.
6. Strel'tsov VN, "On Relativistic Length" *Found. Phys.,* **6**, p293-7; "The Question is: are Fast Moving Scales Contracted or Elongated?" *Hadronic J.*, **17**, 1994, p105-114.

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