Reports on 041808A:

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The First Report: Friday, April 25, 2008

Dear Editor, in relation to your requirement for the revision of the referenced manuscript like 041808A, my commentaries to this article are the following ones.

1) In the abstract author states that Special Theory of Relativity is "based on three main conclusions: a) longitudinal length contraction, b) time dilation and c) the invariance of the speed of light."

I disagree; conclusions (a) and (b) are a direct consequence of (c). The only way that the speed of light preserves constant is that space and time are not absolute, hence the phenomenon of length contraction and time dilation. Time dilation effects are very well known in synchronization of clocks in satellite communications. Among others, this fact is a verification of relativity theory, which implies that it is not a relativistic belief. -Consideration of the constancy of speed of light implies non-absolutism of time and space- and -consideration of absolutism of time or space implies variance of the speed of light-. That's why Relativity and Ether theories are contradictory and exclude mutually.

2) In the article, after concluding the Analysis of section Violations, "nullifying" Lorentz Transformations, author proposes a new set of transformations derived "in the usual way as Lorentz Transformations" (¿?).

3) Equation (2) indicates that time is not absolute.

4) Later, in a non explained manner equations (3) through (11) were obtained, and also concluded without any proof that such expressions are invariant under Maxwell Equations.

5) Author in his conclusions, claims for a non-shown superiority of his relativity theory in where "time, space and light speed are absolute", but relativistic (?). Also, author suggests that inconsistencies of any accepted theory with his new proposed relativity theory "should not be reliable and needs further investigation for modification to find the real story behind that".

In conclusion, I feel that this paper has a long way to go in content and presentation, prior to reconsideration for publication.

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The Second Report: Tuesday, April 29, 2008.

Hello,
I'm writing only to apologize; I have not found any free time to seriously

study the article you sent me.

As far as Lorentz transformation is concerned, the author of article in question has inherited confusing attitude very common among inexpert physicists -- that the transformation is inconsistent, although premise of invariance of c is still correct. Speaking for myself, I do not like very much attempts to redefine concepts of space and time; there is no practical need for that.

Unfortunately there is no way to avoid the unhappy state of physics -- it is reflection of ourselves and our inability to understand nature. There seems to be no use in simply ignoring people who pursue impossible solutions to very, very simple problems.

Therefore I suggest you to simply allow the article to be published on your site, if you haven't already done so. Free thinking, even if crazy, does not do any harm to your online magazine.

Regards

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The Third Report: Sunday, May 4, 2008.

Thanks for inviting me to be a reviewer. This is my opinion on paper 041808A:

A) Special Theory of Relativity is based two postulates (http://en.wikipedia.org/wiki/Postulates_of_special_relativity):

1. First postulate (principle of relativity)

> 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.

2. Second postulate (invariance of *c*)

> Light is always propagated in empty space with a definite velocity *c* that is independent of the state of motion of the emitting body (and of the state of motion of the observer who is measuring light speed).

By establishing that if an observer at the origin O of a system, measures during a time t that a light ray travels a distance $x^2 + y^2 + z^2 = c^2t^2$, observer at origin O', moving at speed v relative to O, must measure $x'^2+y'^2+z'^2 = c^2t'^2$. From here it is obtained the Lorentz Transformations (Schaum's collection), in which observer at O measures a different distance to that measured by observer at O' and also different measured times. Under conditions of simultaneity of events it is obtained at O a length contraction, and under the condition that measurements are done at the same location it is obtained the time dilation. In this way, time dilation and length contraction are consequences and not basement of the Special Theory of Relativity.

B) Violations. In referred examples are not taken into account previous two postulates. This is the reason why authors obtain the classical results of length and time being the same for both observers (absolute length and time).

C) Modifications. Proposed new Relativistic Transformations in this paper, expressed in equations (1) and (2), seems to be a modified Galilean Transformation but considering an additional time transformation. Let's check if these transformations, for $y = y$ and $z' = z$, maintain the speed-of-light constancy as it is for Lorentz Transformations:

$$x^2 + y^2 + z^2 = c^2 t^2$$
$$x'^2 + y'^2 + z'^2 = c^2 t'^2,$$

Substituting the new transformations

$$(x - v.t)^2 + y'^2 + z'^2 = c^2\left(t - \frac{v}{c^2}x\right)^2$$

$$x^2 + y^2 + z^2 - 2vtx + v^2t^2 = c^2t^2 - 2vtx + \frac{v^2}{c^2}x^2$$

$$c^2t^2 - 2vtx + v^2t^2 = c^2t^2 - 2vtx + v^2t^2 - \frac{v^2}{c^2}y^2 - \frac{v^2}{c^2}z^2$$

This last expression is only valid for $y = z = 0$. Say, new transformations are not general. Let's work them as vectors, as authors in a more general way suggest. Thus, by remembering from LT that if O measures that velocity of O' is $\mathbf{v}$, velocity of O measured from O' is $-\mathbf{v}$, and also depending on where measurements are made, following new relationships should be obtained:

$\mathbf{r}' = \mathbf{c}.t'$ and $\mathbf{r} = \mathbf{c}.t$; $\mathbf{r}' = \mathbf{r} - \mathbf{v}.t$ and $\mathbf{r} = \mathbf{r}' + \mathbf{v}.t'$

Substituting first two into second two and multiplying, we obtain:

$$\left.\begin{aligned}\mathbf{c}.t' &= \mathbf{c}.t - \mathbf{v}.t = t.(\mathbf{c} - \mathbf{v})\\ \mathbf{c}.t &= \mathbf{c}.t' + \mathbf{v}.t' = t'.(\mathbf{c} + \mathbf{v})\end{aligned}\right\} \Rightarrow \mathbf{c}.t' \bullet \mathbf{c}.t = t.t'.(\mathbf{c} \bullet \mathbf{c} - \mathbf{v} \bullet \mathbf{v}) \Rightarrow c^2 = c^2 - v^2$$

Last result is only valid for $v = 0$, indicating that new vector transformations are not general either.

Given the no generality of previous transformations, they are not valid to be used as a basic starting point for developing a new Theory of Relativity. According to my humble opinion I don't recommend this paper for publication in this Journal.

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The Fourth Report: Monday, May 5, 2008.

I have re-read carefully the manuscript 041808A and the first author's response. I ratify my opinion on this work:

A) In his seminal paper published on June 30, 1905, *ON THE ELECTRODYNAMICS OF MOVING BODIES*, in chapter two Einstein wrote:

§ 2. On the Relativity of Lengths and Times

The following reflexions are based on the principle of relativity and on the principle of the constancy of the velocity of light. These two principles we define as follows:

1. 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.

2. Any ray of light moves in the "stationary" system of co-ordinates with the determined velocity c, whether the ray be emitted by a stationary or by a moving body.…

In these reflexions Einstein established clearly the foundations of the Special Theory of Relativity. In this sense, not only the expansion of the time and the contraction of the length are consequences of these principles, but also it is it the increase of the mass.

B) If the value of the length of a bar is the same one as much for a "stationary" observer as for a "moving" observer, I can accept the quality of absoluteness of such length. Similarly I understand the absoluteness of time, if time is the same one as much for a "stationary" observer as for a "moving" observer. But if the Length and the time, are not such for both observers, and author of this manuscript claims that absoluteness of time and length is maintained in his new theory, although there exists space-time interdependence, then confusion is unavoidable. In our opinion, in his new theory, space-time interdependence implies the non absoluteness of length and time.

C) Readers, in case of doubt are not obliged to obtain the derivation of transformations. For a reader to check in his mind it is easier if paper is self-sufficient and clear in its presentation, whereas it treats a new theory.

D) Author talks about absoluteness of time and length in his work and nowhere is it demonstrated. Author affirms that any other theory inconsistent with his new theory and he does not show how, it should be modified.

In conclusion, I insist this paper needs to be reworked and revised prior to be considered for publication.

Regards,

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The Fifth Report: Tuesday, May 6, 2008.

Dear editor, authors in their last response had not explained the following:

A) For $y = y$ and $z' = z$,

$$x^2 + y^2 + z^2 = c^2 t^2$$
$$x'^2 + y'^2 + z'^2 = c^2 t'^2,$$

Substituting the new transformations

$$(x - v.t)^2 + y'^2 + z'^2 = c^2\left(t - \frac{v}{c^2}x\right)^2$$

$$x^2 + y^2 + z^2 - 2vtx + v^2t^2 = c^2t^2 - 2vtx + \frac{v^2}{c^2}x^2$$

$$c^2t^2 - 2vtx + v^2t^2 = c^2t^2 - 2vtx + v^2t^2 - \frac{v^2}{c^2}y^2 - \frac{v^2}{c^2}z^2$$

Where, this last expression is only valid for $y = z = 0$.

B) And, their exposed procedure for demonstrating the consistency of the new transformations, repeated here:

For the next part,
$r' = ct'$
$\Rightarrow r - vt = c(t - vr/c^2)$
$\Rightarrow r - vt = ct - vr/c$
$\Rightarrow r\,(1 + v/c) = ct\,(1 + v/c)$
$\Rightarrow r = ct$

Again is only valid for the one-dimensional case in where vectors and scalars behave the same (vector division is not allowed).

While we're on the subject, the only way authors solve the lack of generality of the new transformations is by using a factor of proportionality k inside them, i.e.:

$\mathbf{r}' = \mathbf{c}.t'$ and $\mathbf{r} = \mathbf{c}.t$; $\mathbf{r}' = k.(\mathbf{r} - \mathbf{v}.t)$ and $\mathbf{r} = k.(\mathbf{r}' + \mathbf{v}.t')$

Substituting first two into second two and multiplying, it is obtained:

$$\left.\begin{aligned}\mathbf{c}.t' &= k.(\mathbf{c}.t - \mathbf{v}.t) = k.t.(\mathbf{c} - \mathbf{v})\\ \mathbf{c}.t &= k.(\mathbf{c}.t' + \mathbf{v}.t') = k.t'.(\mathbf{c} + \mathbf{v})\end{aligned}\right\} \Rightarrow k^2.\mathbf{c}.t' \bullet \mathbf{c}.t = k^2.t.t'.(\mathbf{c}\bullet\mathbf{c} - \mathbf{v}\bullet\mathbf{v}) \Rightarrow c^2 = k^2.(c^2 - v^2) \Rightarrow k = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$$

This is the known value of k in relativity, which by now seems to be unique.

This value introduced in (A), solves the lack of generality indicated for the new transformations:

$$k^2.(x-v.t)^2 + y^2 + z^2 = k^2.c^2\left(t - \frac{v}{c^2}x\right)^2$$

$$k^2x^2 + y^2 + z^2 - 2k^2vtx + k^2v^2t^2 = k^2.c^2t^2 - 2k^2.vtx + k^2.\frac{v^2}{c^2}x^2$$

$$k^2.\left(1-\frac{v^2}{c^2}\right).x^2 + y^2 + z^2 = k^2.\left(1-\frac{v^2}{c^2}\right)c^2t^2 \;\Rightarrow\; x^2 + y^2 + z^2 = c^2t^2$$

By using this factor, Lorentz in his transformations and Einstein in his Special Theory of Relativity obtained compatible results and others until nowadays. However, despite previous demonstrations lead to believe in the complete correctness of the Lorentz Transformations and the Special Theory of Relativity, it is possible to find some other flaws into them.

Under this optic new transformations are not consistent.

Regards,

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The Sixth Report: Tuesday, May 27, 2008.

Although author insists in his new theory, we have yet observations to do:

A) Additionally to my first report, I had read the third report, in where reviewer indicated in part B: "Violations. In referred examples are not taken into account previous two postulates. This is the reason why authors obtain the classical results of length and time being the same for both observers (absolute length and time)." I think author overlooked the real meaning of this statement. I'll try, as far as I understood it, to explain the situation: In part 1) in the first experiment, author suggests a way to measure the length of a rod as by a fixed observer as by a moving one. It would allow measuring correctly the rod length AB in both systems, i.e.: AB=C'D'=CD. Until this point, we agree. Let's assume that in Fig. 1 of Author's paper the S frame has its origin at O with coordinates X and Y and a rod AB is moving relative to O at velocity v, parallel to fixed X axis. Let's put easier the situation: moving X' axis is on the same line of fixed X axis. Allow a second observer being at O', located coinciding with point A, one of the extremes of the rod AB. Then, length AB of rod for second observer becomes the real length of it, because rod AB is at rest relative to O'. Let's call this length L_0. So, AB = C'D' = CD = L_0. But,

this length is a moving length for observer at O. Thus, AB = C′D′ = CD = L_0 is, for O, a measure of a moving length. According to Lorentz Transformations the coordinate x′, fulfilling the Einstein two postulates, of the moving first extreme point A, measured from O′ in function of what is measured from O, is given by $x'_A = 0 = \gamma.(x_A - v.t')$, because A is coincident with O′ and so $x'_A = 0$, and γ is the Lorentz factor: $1/\sqrt{(1-v^2/c^2)}$. If coordinate of moving point B, fulfilling the Einstein two postulates, $x'_B = \gamma.(x_B - v.t)$ measured at the same time t relative to O, ***the relationship between measured length at O and moving length AB at O' of the moving rod will be given by***:

$$X'_B - x'_A = \gamma.[(x_B - x_A) + v.(t - t)] = \gamma.[(x_B - x_A) = \gamma.L$$

Where, $X'_B - x'_A = X'_B = AB = C'D' = CD = L_0$ ➔ $L = L_0/\gamma$

In this result is effectively demonstrated the contraction the known length at rest of a rod when it is measured when it is moving at constant speed v. The experiment suggested by author is only good for obtain (at the fixed system S) **the value of the moving length of the rod, L, to compare it with its known value at rest** L_0. In this sense, statement of contraction of length is not relativistic belief. The experiment suggested by author is a splendid proposal to be taken into account, or based on it, to measure the moving value L at the fixed system S with origin at O, given a previously known value at rest, L_0.

A similar analysis, based on Lorentz Transformations can be done for the relationship between time t measured at O and t_0 measured at O′ at the same location.

B) New modifications proposed for transformations are again not consistent. For example, the wave equation is not invariant (as it should be by the second postulate) to new transformations:

For: $x'=x-v.t$, $y'=y/\gamma$, $z'=z/\gamma$, and $t'=t-v.x/c^2$

$$\delta x'/\delta x=1, \quad \delta t'/\delta t=1, \quad \delta y'/\delta y=\delta z'/\delta z=1/\gamma, \quad \delta x'/\delta t=-v, \quad \delta t'/\delta x=-v/c^2$$
$$\delta x'/\delta y=\delta x'/\delta z=\delta y'/\delta x=\delta y'/\delta z=\delta y'/\delta t=\delta z'/\delta x=\delta z'/\delta y=\delta z'/\delta t=0,$$

It is obtained that:

$$\delta^2\phi/\delta x^2+\delta^2\phi/\delta y^2+\delta^2\phi/\delta z^2-(1/c^2)(\delta^2\phi/\delta x^2)=\mathbf{(1-v^2/c^2)}[\delta^2\phi/\delta x'^2+\delta^2\phi/\delta y'^2+\delta^2\phi/\delta z'^2-(1/c^2)(\delta^2\phi/\delta x^2)]$$

This result demonstrates that wave equation is not invariant, and implies that new transformations are not candidates to substitute neither Lorentz Transformations nor SRT.

Our recommendation remains the same: it should not be published in JVR.

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