

I cannot understand the following statement: <<Part 2 ... The manuscript suffers from both mathematical and logical errors.>>

This is the second Reviewer's comment that "suffers from both mathematical and logical errors". For example,

Second Reviewer's comment

3. In the author's mathematical exercise..... 2

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My objection) This is an entirely mistaken arguing. In particular, I nowhere state that the distance between starting points A and B is equal to d .

RESPONSE: Looking at the calculation again, I agree that the author did not use d in the calculations. But the use of the relativistic velocity addition equation is incorrect (as I initially stated). The author calculated the time with the normal velocity in γ and then divided this by γ with the relativistic addition velocity calculation. This use of the relativistic addition velocity equation does not make sense, as it should have been used just once at the beginning. Therefore, I still think that the mathematics is incorrect.

Second Reviewer's comment

4. The author indicates that the "simplified" Lorentz transformation time equation is used for non-inertial reference frames. This is not correct.....

My objection) Where is such an indication?

RESPONSE: On page 6 of the original submission the author wrote: "The well known formula (Eq) determines a one-to-one correspondence between time t in an inertial system and τ in a non-inertial system."

Where is the reference for the assertion that the equation is to be used between an inertial and a non-inertial reference frame? In my initial review, I gave a reference showing that the equation is meant to be used between two inertial reference frames (Einstein's 1905 paper). The Einstein paper provides explicit theoretical justification for the use of this equation between inertial reference frames (and following Einstein's logic, it would not apply to non-inertial reference frames). While others have used the equation for time dilation between an inertial and non-inertial reference frame, there is no valid theoretical justification for its use in this way. For an example of this dearth of theoretical grounding, look at the justification that Hafele & Keating gave for the absolute time dilation they observed in their experiment – they cite Builder, 1958 (in their reference#6) – note that Builder argues in his paper for an absolute reference frame (precisely the opposite of special relativity).

Second Reviewer's comment

5. However, the author's arguments are not fleshed out with mathematics or Minkowski diagrams and are presented as statements of fact without an in-depth discussion of the error. ...

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My objection) Please, take a look on the formulae 1-7, dealing with the Minkowski's world according to the relativistic laws. Diagrams play a subsidiary role and cannot substitute mathematics. I don't deny a possible existence of the length contraction paradox, but it must be found yet. The complexity of rotating systems consists in the non-Euclidean geometry, but it does not abolish validity of the well-known formula $\Delta\tau = \int \sqrt{1 - (V(t)/c)^2} dt$.

RESPONSE: The author's only fully explained part of the manuscript is the section regarding the "coeval" paradox (this includes formulas 1-7). Other sections pertaining to other paradoxes in the Artekha et al. paper are not fully explained with either mathematics or Minkowski diagrams. The use of the above equation is just to say that non-inertial reference frames are "subservient" to inertial reference frames – but again, where is the theoretical justification for this? And note that the use of "the subservience of non-

inertial reference frames" to explain absolute time dilation in a rotating frame will not apply to the "coeval" paradox, where every observer is in an inertial reference frame.

Second Reviewer's comment

6. ... the manuscript misses the point of the main paradox and does not provide satisfactory rebuttals for the other points.

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My objection) This thoroughly distorted conclusion is a direct consequence of the reviewer's misunderstanding of the issue, noted above.

I kindly ask the second Reviewer to point out my would-be "mathematical and logical errors".

RESPONSE: The main point of the "coeval" paradox is that it is not possible for both "coevals" to observe each other as being time dilated when their clocks are directly compared. The mathematics presented in equations 1-7, even if it was correct, would not alter this fact. The author is just using mathematics to describe what special relativity would predict for the time dilation that each "coeval" thinks that the other is time dilated. The author's manuscript does not describe how each "coeval" can be correct in having the other "coeval" be younger when the two "coevals" directly compare their clocks. Saying that both "coevals" are time dilated relative to the origin is also not correct, as special relativity suggests that a clock at the origin would also be time dilated relative to each "coeval" (as all three are in inertial reference frames moving relative to each other). Even if the author corrects the mathematics in equations 1-7, it would not address the central point of the paradox – how can clocks that are being compared directly to each other be time dilated relative to each other at the same time. Not addressing this central aspect of the paradox is the error in logic that I was referring to. There may be a correct answer to the paradox, but the author has not provided it. Without an adequate answer to this central paradox, the manuscript is not worth publishing.