Re: The Real TWINS Paradox − the Simplest Version

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- *From*: RP <no_mail_no_spam@xxxxxxxxx>
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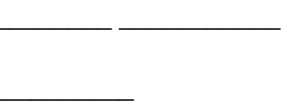
On Oct 19, 12:03 pm, Phil <toob−head...@xxxxxxxxxxxxx> wrote:

> Sue... wrote:
>
> Well, this time I am mostly impressed! You still referred to "other
> references," instead of reasoning it out for yourself, but I was fairly
> harsh, and you responded with pure class ... the Sue I am used to seeing!
>
> Thanks,
> Phil
>
> P.S. The universe does allow an experiment to "reveal" to us that
> information about our "absolute velocity" which we could simply deduce
> on our own, PRIOR to running the experiment. If we KNOW, prior to
> running an experiment, that the experiment's velocity will include a
> change of 0.6c relative to inertial observer C, as seen by inertial
> observer C, then it would actually be amazing if the results of that
> experiment were NOT consistent with a change of 0.6c, such as an elapsed
> time of 0.8 relative to any inertial observer.
>
> Similarly, simple geometry PROVES that if observer A goes on a round
> trip with a constant velocity of 0.6c relative to inertial observer C
> (the clock paradox), then A's AVERAGE absolute velocity is also at least
> 0.6c, meaning that A's clocks should show an elapsed time of 0.8
> relative to C. However, we cannot deduce, prior to the experiment,
> anything about C's absolute velocity of 0.6c, so unless the principle of
> relativity is false, then as seen by C, A must ALWAYS end up with an
> elapsed time of exactly 0.8, regardless of C's absolute velocity, and
> that is in fact the case. Remember, relativity does not disprove
> absolute velocity; the conclusion has been that absolute velocity should
> be eliminated from physics because it is irrelevant, not because
> relativity has somehow proven that absolute velocity doesn't exist.
> Alen's exercise is an indication that this largely PHILOSOPHICAL
> conclusion may not be completely justified, even though the exercise in
> no way contradicts the LAWS of SR.

It is because observer C cannot determine that he is in motion that

there is no absolute reference. If the ticking rate offset is a function of absolute velocity, then your argument would fail instantly. It is because the ticking rate of the moving clock is reduced independently of it's direction of motion wrt C that there is no absolute reference. Suppose C is moving "absolutely" at .5c wrt the absolute reference frame, and that A is moving at 0m/s wrt the absolute reference frame. Direction wrt C would produce different effects on A if there were an absolute frame. It is because the ticking rate offset is a function of velocity wrt the reference frame of C, regardless of the frame that C finds itself at rest in, that there is no absolute reference frame.

Here's a very simple gedanken that will prove Lorentz's notion of a physical contraction of measuring sticks is contradictory to the lorentz transform. In this thought experiment we have 3 identical poles arranged in free space in this manner.



The system is at rest wrt K but moving at v to the right along x wrt K'. According to the transorm these poles will be length contracted wrt K'. If the space between the top two poles isn't contracted in addition to the contraction of the poles, then either the total length of the assemembly would have to be contracted by the lorentz factor, thus including the space between the top two poles, or there will be a displacement along x between the end points of the top poles and the bottom pole. However, if we connect the three poles with beams at right angles, like this

then it is now a single object whose total length contracts, and thus the space between the two top poles along with it. No physical forces are applied to the top two poles to bring them closer together because nothing has changed whatsover except our frame of reference, the latter of which cannot provide for physical forces that weren't already present wrt other inertial frames. To illustrate this point a bit better, suppose that the poles are telescopic and have an internal mechanism to extend or contract them. if two such poles (like the top two poles above) contract while in motion or at rest then the space between them will increase unless the two are bound in some way, in which case forces would be required to accelerate the poles toward each other as they contracted in length.

Since there is no such mechanism provide by a simple change in our perspective, then it follows that the lorentz transform requires a

contraction of space wrt the moving observer rather than a contraction of the objects located in it per se. This is in fact what the lorentz transform is designed specifically to do, and one can only wonder what lorentz was thinking. There is absolutely no connection between the lorentz transform and his idea of forces acting to physically contract objects. They are mutually exclusive theories. That is why Einstein recieved credit.

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