

Re: Tree Paradox

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- *From:* "RP" <no_mail_no_spam@xxxxxxxx>
 - *Date:* 16 Apr 2006 20:45:24 -0700
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eleaticus wrote:

"RP" <no_mail_no_spam@xxxxxxxx> wrote in message
news:1145223124.200068.313200@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

eleaticus wrote:

The tree, having previously been in the unchanging neighborhood and with

perfect knowledge of itself knows that it will grow exactly 120 more rings before it gets chopped <by the 'stationary' ax> and dies.

Redundant, all observers will predict the same number of rings.

Relative to the station the tree is moving at $v \sim .94281c$, so $\gamma = 3$ in

the station's view.

Therefore the station Relativists know darn well that time has slowed

for the tree to just a third of the station time.

The number of new rings at chop-time, thus, must be only 40

No it mustn't. Wrt the station observer the distance traversed is 3 times greater, thus offsetting the slowed growth rate exactly and

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allowing time for 120 rings to grow during the tree's travel at v .

In general, and in particular, I very much appreciate your response.

In the particular, because you bring up the two views of the distance, which I make much of in a post elsewhere and which will show up here in many segments..

But, you do realize that you are saying that if the tree synchronizes clocks with the station which is synchronized with the ax, that the tree's clock will show the same time as the ax's clock upon the tree's arrival at the ax?

Observers in rectilinear motion wrt each other cannot synchronize their clocks wrt both frames. An ability to do so would automatically require $t=t'$, implying Galilean Relativity. Even when synchronized wrt one of the frames, there would be no contradiction in the fact that the two clocks will agree upon their passing one another. Wrt the frame in which they are not synchronized there will now be a disagreement about their closing velocity wrt each other, which will offset the difference in displacement as measured by the two observers. You've only replaced ticking rate differences with velocity differences.

We can take it one step further and recalibrate the measuring sticks so that wrt the tree's frame both itself and the ax will measure the same time-like and space-like displacements. Now there will be no offsets, and obviously no disagreements. There is also no contradiction raised by this arbitrary recalibration. It would be a fallacious conclusion that "the clocks both agree and disagree", since the former occurs in one context, and the latter in another".

And that an initially synchronized travelling twin will arrive at a site that has its clock synchronized with his stationary twin's and find that his clock reads the same as the site's and his twin's, and that when he returns, completing the round trip, his clock will read the same as his twin's?

It will indeed, but he will nevertheless be younger than his twin because he cannot recalibrate his own physiological processes. There is no contradiction. The traveling twins clock will age less than what it's reading implies, by definition of *recalibration*.

And you do realize that you come close to saying the whole gamma bit is wrong?

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No.

That if light travels at c and you and gamma are correct then any distance it travels should be contracted in its view to at least close to zero so, by your logic, in the stationary observer's view the light has to travel for a distance damn near infinitely greater than the light 'thinks'? Which would make c damn near infinite?

c is infinitely greater than zero, which is not the same as saying that c equals infinity.

The least that could be said, if you are right in saying the stationary view is that the moving object has to travel the stationary object's distance, is that if you let light travel without its own space-contraction then you have to discard gamma as universal law.

No observer can travel at c because of that law. By assuming a frame of reference moving at c wrt another frame you are applying a non-real initial condition. Might as well assume that it was a pixie and that it was moving at $2000c$.

Only what the ax sees should be counted in what the ax sees. Only what the tree sees should be counted in what the tree sees.

And they will both see the same invariants.

Richard Perry

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