Re: Nikola Tesla on Relativity

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2005−02/3451.html

---

From: Gregory L. Hansen (*glhansen_at_steel.ucs.indiana.edu*)
Date: 02/15/05

Date: Tue, 15 Feb 2005 19:08:00 +0000 (UTC)

In article <1108491651.168712.50760@c13g2000cwb.googlegroups.com>,
<cadwgan_gedrych@yahoo.com> wrote:
>You have erroneously but consistently claimed that I do not have
>an experiment. It's time for you to shoulder the burden of proof:

An experiment involves apparatus, measurements, numbers with error bars. An experiment asks Nature a question and accepts the answer. You have a thought experiment. It's an analysis of a hypothetical situation where you assume some set of postulates and tell Nature what the answer is. A thought experiment illustrates a theoretical point, it is not a measurement.

And I have shouldered the burden of proof. I've (tried to) explain that your thought experiment is not free of assumptions, transforms, rulers, and clocks. And that your assumptions directly contraindicate the postulates of relativity, so your argument essentially reduces to "We can prove relativity is wrong if we first assume it is wrong."

>
>Show on paper how two clocks which are always in the same
>frame can be used to experimentally measure light's one−way
>speed.

All clocks exist in all frames. Some clocks will be at rest in some frames and in motion in others.

Two clocks stationary in the experimenter's rest frame, then.

That's hard to do because of synchronization issues. If we synchronize with a centrally located signal traveling along equal lengths of cables, if the speed of light is not isotropic then the signal speed will not be isotropic, either. We can use Seto's slow transport of clocks if we're making a test of transformation equations that predict a time difference that goes to zero as the transport speed goes to zero, but that requires a model of a specific thing to be tested.

But if we can assume the isotropy of space or some way to synchronize the clocks, we can shine a beam from A to B, and then from B to A, and

compared elapsed times.

>
>SR is based on Einstein's twin claims that not only is there
>such an experiment, but that its result is invariance.

In his 1905 paper Einstein described a synchronization procedure that involved a round trip, not one−way. Some people call the isotropy of space an unstated third postulate, but I see it as a consequence of the first, the principle of relativity, because an inertial reference frame that had been rotated is still an inertial reference frame where the laws of mechanics are good.

>
>To repeat:
>Show on paper how two clocks which are always in the same
>frame can be used to experimentally measure light's one−way
>speed.
>

I do not see how my failure or success at that would change my analysis of your thought experiment. I don't have to make any kind of proof of the correctness of special relativity to say that if it's wrong, it's not wrong for the reasons you've given.

Oh, heck. The fire alarm just went off.

−−
"When the fool walks through the street, in his lack of understanding he calls everything foolish." −− Ecclesiastes 10:3, New American Bible