Re: Is This a Subtle but Completely Legitimate Redefinition,

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2008−07/msg03012.html

- *From*: The TimeLord <math−n−physics−not@xxxxxxx>
- *Date*: Thu, 31 Jul 2008 13:13:52 −0500

Am Wed, 30 Jul 2008 05:36:04 −0700 schrieb stevendaryl3016@xxxxxxxxx
(Daryl McCullough) in g6pn7k0cvs@xxxxxxxxxxxxxx:

> The TimeLord says...
>
> > Am Tue, 29 Jul 2008 21:36:33 −0700 schrieb Shubee
> > <e.Shubee@xxxxxxxxx>
> > in
> > 42be138c−a4fe−4cad−bcbc−c7ec0402e61a@xxxxxxxxxxxxxxxxxxxxxxxxxxxx
> > in
> > sci.physics.relativity:
> >
> > > It's not clear to me why the Lorentz transformation can't be
> > > reduced
> > > to the Galilean transformation by resetting clocks, rescaling
> > > distance
> > > measures and fiddling with clock rates according to the
> > > recipe on page
> > > 11 of
> > > http://www.everythingimportant.org/relativity/special.pdf
> > > and
> > > equations (48) to (58).
> > >
> > > How do you answer this riddle?
> > >
> > > Shubee
> >
> > Easy. The Lorentz transformation
> >
> > x' = gamma (x − v t)
> > y' = y
> > z' = z
> > t' = gamma (t − v x / c^2)

> is not the same as the Galilean transformation
>
> x' = x − v t
> y' = y
> y' = z
> t' = t
>
> Simple inspection reveals that.

> > What Shubee is saying is that whether you have Galilean transform or
> > Lorentz transform relating two frames depends on how clocks are
> > synchronized in those frames. However, the *same* synchronization
> > procedure, slow clock transport, leads to the Galilean transform if
> > Newtonian physics is correct and leads to the Lorentz transform if
> > Special Relativity is correct.

I didn't gather that from the question. I've been staring at the question trying to see if I've missed the point somehow, but have come to believe that he is asking exactly what he stated; if you can derive one from the other by simple rescaling, particularly as done like the "rescaling" at the web site. I've looked at the web site and it doesn't appear to be a rescaling as mathematicians would define the term.

The fundamental disagreement between the Galilean and Lorentz transforms is that Galilean transform does not depend on x. So they can only be made to agree (as far a physics is concerned) when v=0. No dickering with distance measures to time rates is going to make them agree as far as I can tell. − If there is a way, someone should post it. However from just topological considerations I don't believe there is a way.

> > Slow clock transport means that you synchronize distant clocks by
> > bringing all clocks together in one spot and setting them to the same
> > time. Then you slowly move the clocks to their final location.

Which would mean that you could use the Galilean transform as an approximation to Lorentz in that case. But that's already built into Relativity. If that is what Shubee is asking, then I think the question is ill−stated, which I don't believe. I believe he is asking exactly what he posted.

−−
// The TimeLord says:
// Pogo 2.0 = We have met the aliens, and they are us!
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