

Re: A funny kind of rectilinearity

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- *From:* shuba <tim.shuba@xxxxxxxxxxxxxx>
 - *Date:* Mon, 01 Aug 2005 21:33:42 -0500
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Mark Adkins got to the point:

- > my basic point: the
- > mathematical basis for "time dilation" disappears altogether when the
- > principle of the relativity of simultaneity is properly (universally)
- > applied, that is to say, applied to include (rather than exclude as a
- > special case) the clock synchronization procedure.

Say what? Two different frames, say A and B, already have their own convention to determine simultaneity – that's part of the definition of an inertial frame in special relativity. Time dilation is simply the determination by B that A's clock rate, although lasting exactly one tick per second by A's measurements, is longer when measured by the clocks in the B frame.

The mathematical basis for time dilation is fairly simple geometry. In fact, the implications of the underlying geometry are far more interesting, physically, than all the gee-whiz stories about twin paradoxes or semantic nonsense about how clocks are slowed by their velocity. Relativity is fundamentally about symmetry, and symmetry is described by geometry.

---Tim Shuba---

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• *References:*

- ◆ *A funny kind of rectilinearity*
◇ *From:* msadkins04
 - ◆ *Re: A funny kind of rectilinearity*
◇ *From:* Tom Roberts
 - ◆ *Re: A funny kind of rectilinearity*
◇ *From:* msadkins04
- Prev by Date: *Re: A funny kind of rectilinearity*
 - Next by Date: *Re: Relativity and FTL Travel FAQ*
 - Previous by thread: *Re: A funny kind of rectilinearity*

Re: A funny kind of rectilinearity

- Next by thread: ***Re: A funny kind of rectilinearity***
- Index(es):
 - ◆ ***Date***
 - ◆ ***Thread***