Re: relativity of simultaneity − real or perceived?

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2005−05/msg01046.html

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- *Date*: Sun, 15 May 2005 00:58:40 +0000 (UTC)

In article <1116115307.336850.233500@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx>,
Curious <anthonyroseuk−curious@xxxxxxxxxxx> wrote:
>Jon, I am very surprised to see your diagram! Thanks very much − it
>makes the figures very much clearer. This confirms my understanding of
>what you are saying.
>However, this is not where my curiousity lies.
>I need to know whether the equations are telling us where the particles
>would be *perceived* to be to an observer at x' = 0 and t' = 0, or
>whether they are telling us where the particle actually is wrt to frame
>2. If for example we were on a spaceship travelling at 0.5c

....moving along with the rod, I assume, so that from our point of view the
rod is stationary...

>some time
>before this event, and had to be able to calculate exactly where the
>two particles would be at time t' = 0 given that we know where they
>will be wrt frame 1 at time t = 0, would we expect particle B to be at
>x' = 0.87 and the right end of the box at x' = 1.3?

If we believe the Lorentz transformation equations, yes. That's how we
would have to calculate the expected values of x' for the particles and
the ends of the box.

>Is this saying that for frame of reference 2, the two particles do NOT
>pass each end of the box simultaneously −

Yes.

>in other words, is this
>saying that two contradictory scenarios both occur?

Why is this necessarily contradictory? What concrete physical difference
could it make? If two events are simultaneous in one reference frame, why
might it be physically contradictory for one to precede the other, in a
second reference frame? Try to be as specific as possible.

Hint: it might help to consider a third reference frame in our example,
moving to the left with respect to the first one at speed 0.5c. In this

reference frame, photon A passes the left end of the rod before photon B passes the right end. That is, in frame #3 the two events take place in the opposite sequence to frame #2. Your problem with relativity of simultaneity might be easier to articulate by comparing frame #2 to frame #3.

Yes, I'm sort of setting a trap for you. ;−) There *is* a potential concrete problem with relativity of simultaneity, and I'm trying to make sure that we agree on wh