Re: The Twin Paradox explained from the moving twin ?

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2006−09/msg01568.html

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- *Date*: Sun, 17 Sep 2006 12:03:15 GMT

"Nicolaas Vroom" <nicolaas.vroom@xxxxxxxxxx> wrote in message
news:O89Pg.80940$Uh2.1177712@xxxxxxxxxxxxxxxxxxxxxxxx

> "Dirk Van de moortel" <dirkvandemoortel@xxxxxxxxxxxxxxxxxxxxxxxxxxx> schreef in
> bericht
> news:XbzOg.77748$oT2.1054784@xxxxxxxxxxxxxxxxxxxxxxxx
>
> > "Nicolaas Vroom" <nicolaas.vroom@xxxxxxxxxx> wrote in message
> > news:oJ9Og.75563$t31.1106993@xxxxxxxxxxxxxxxxxxxxxxx
> >
> > > Question:
> > > Is it possible to explain the Twin Experiment from the
> > > moving point of view ?
> > >
> > > IMO this is not possible.
> > >
> > > When the two Observers meet they realize that there clocks
> > > are not the same.
> > > To be more specific: The clock of the moving observer runs
> > > behind.
> > > The clock of the moving observer runs slow.
> > >
> > > To explain the Observer at rest will say:
> > > Look on my clock I read 10000 counts.
> > > Based on the speed v (Lorentz Transformation) gamma is 0.5
> > > That means your clock should read 5000 counts.
> > > Which is what we measure. qed.
> > >
> > > The question is: Is it possible to explain this also from the
> > > point of view of moving observer ?
> > >
> > > IMO this it not possible.
> > > The moving Observer has to accept what the Observer at rest
> > > tells him.

For more details goto :
http://users.telenet.be/nicvroom/dirk3.htm

From that page:

| 1. When the clock of A reaches 1 time unit (t=1), A issues a light signal to B.
| 2. When B receives this signal, this defines the turnpoint P, B returns back home

Up to here everythig is okay.
Now the trouble starts:

| 3. The distance from A to point P is x.
| 4. The time for the signal to go from A to B is t

So you want the event [B2] to have coordinates (t,x). Bad idea.

| 5. x = ct = (1+t)*v
| 6. ct − vt = v
| 7. t = v/(c−v) time units

This is wrong.

This is not wrong.
See below.

It is wrong. I have given you the proof that it is wrong below.

You confuse the coordinates of some event with the variables
so you make a mistake from the very start.
Try to go back your analytic geometry lessons from school.

I wish that would be possible

I have shown you how.

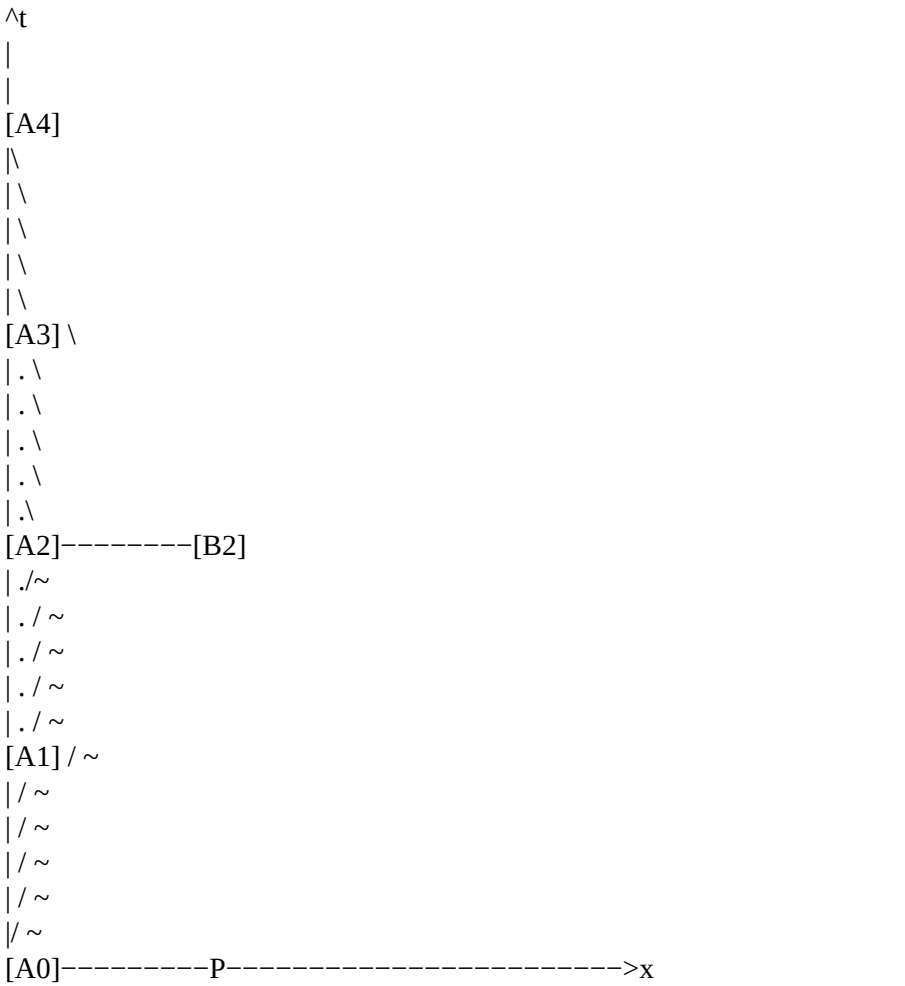
Use the letters x and t as *variables*.

I agree what you do is nicer more general.

Here's a proper diagram:

My diagram is the same.

Yes.



In the coordinates of A, the worldline between [A0} and [B2] B is given by
B: x = v t

The lightline of the signal that is sent out at event [A1] with coordinates
[A1]: (t, x) = (1, 0)
is therefore x−0 = c (t−1), giving
line [A1−B2]: x = c (t−1)

So the event [B2] where B receives the signal is given by solving the system
{ x = v t
{ x = c (t−1)

which gives
[B2]: (t, x) = (c/(c−v), v c/(c−v))

What you do is nicer
For v = c/2 you get:
t = c/(c−v)= 1 / (1−0.5) = 2
x = c(2−1)= c
The same result as I get in the drawing.
B2= (2,1)

But for the time for the signal to go from A to B
I have
t = c/(c−v)
and you have
t = v/(c−v)

So you made a mistake, and it was not a typo.

So you see that:

| 3'. The distance from A to point P is v c/(c−v)
| 4'. The time for the signal to go from A to B is c/(c−v)

Do you understand what you did wrong?

Apparently you don't.
We can't continue before you do...

Dirk Vdm

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