Re: The Twin Paradox explained from the moving twin ?

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2006−09/msg01752.html

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- *Date*: Sun, 17 Sep 2006 17:28:37 GMT

"Dirk Van de moortel" <dirkvandemoortel@xxxxxxxxxxxxxxxxxxxxxxxxxxxx> schreef in bericht news:M6ePg.81384$AU2.1096819@xxxxxxxxxxxxxxxxxxxxxxxx

> "Nicolaas Vroom" <nicolaas.vroom@xxxxxxxxxx> wrote in message news:TjbPg.81143$XS2.1040521@xxxxxxxxxxxxxxxxxxxxxxxx
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> > "Dirk Van de moortel" <dirkvandemoortel@xxxxxxxxxxxxxxxxxxxxxxxxxxxx> schreef in bericht news:7QaPg.81097$ZZ2.1210461@xxxxxxxxxxxxxxxxxxxxxxxx
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> > > "Nicolaas Vroom" <nicolaas.vroom@xxxxxxxxxx> wrote in message news:O89Pg.80940$Uh2.1177712@xxxxxxxxxxxxxxxxxxxxxxxx
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> > > > "Dirk Van de moortel" <dirkvandemoortel@xxxxxxxxxxxxxxxxxxxxxxxxxxxx> schreef in bericht news:XbzOg.77748$oT2.1054784@xxxxxxxxxxxxxxxxxxxxxxxx
> > > >
> > > > > "Nicolaas Vroom" <nicolaas.vroom@xxxxxxxxxx> wrote in message news:oJ9Og.75563$t31.1106993@xxxxxxxxxxxxxxxxxxxxxxxx
> > > > >
> > > > > For more details goto :
> > > > > http://users.telenet.be/nicvroom/dirk3.htm

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.

I did not made any mistake.

Your t and my t are different.

Your t starts from A0
My t starts from A1

It does not.
In http://users.telenet.be/nicvroom/dirk3.htm you say:
| 1. When the clock of A reaches 1 time unit (t=1), A issues a light signal to B.

So your t has value t = 1 at event [A1].
If it started at event [A1] then it would hav value t = 0 at [A1].
So your t does not start from [A1].

But if indeed your t *would* start from [A1] then

> [A1]: (t, x) = (0, 0)
> [A0]: (t, x) = (−1, 0)
> and then you have to solve the system
> { x = c t
> { x = v (t − (−1))
> which gives
> [B2]: (t, x) = (c/(c−v), c^2/(c−v))
>
> But that is not what your first two assumptions suggest:
> | 1. When the clock of A reaches 1 time unit (t=1), A issues a light signal to B.

And that is correct.
Starting from A1 it takes a time v/(c−v) to reach return point B

Starting from A0 it takes a time c/(c−v) to reach return point B.

If you start from A1 you have to add 1 in order to calculate the total time
v/(c−v) + 1 = v/(c−v) + (c−v)/(c−v) = (v + c − v)/(c−v) = c/(c−v)
And that is your answer,
which is correct

And so is my answer.

Your method is more general

> | 2. When B receives this signal, this defines the turnpoint P, B returns back home
>
> Dirk Vdm

It is interesting to compare this with the example by Paul B Andersen
(excluding acceleration of 1 year)

What you have to do is to multiply my example with 100
and then you see that both are the same.

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