Re: thought experiment

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From: Theo Wollenleben (*alpha0x89_at_yahoo.de*)
Date: 08/30/04

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On Mon, 30 Aug 2004 12:51:50 +0200, Dirk Van de moortel
<dirkvandemoortel@ThankS−NO−SperM.hotmail.com> wrote:

>
> "Theo Wollenleben" <alpha0x89@yahoo.de> wrote in message
> news:opsdjjystwldawh6@quercus.physik.uni−halle.de...
>>
*>> Time dilatation formula: t' = sqrt(1−(v/c)^2)*t = 0 for v = c. So Alice*
>> messures time t and you messure time t' = 0. The tranformation equations
>> give the right answer.
>
> Time dilation formula:
> t' = t / sqrt(1−v^2/c^2) for events satisfying x = 0,
> i.o.w. for events taking place on Alice's clock itself.
> So Alice measures t on her clock and for these
> events you would measure time t' = infinity.

In your formula is t' > t. It should be t' < t for a time "dilatation".

When I say t' I mean the time elapsed in Bob's frame of reference, while in Alice's frame the time t has elapsed. With these definition the time dilatation is given by the formula t' = sqrt(1−(v/c)^2)*t.

How to derive this formula:

x' = sqrt(1−(v/c)^2) (x − v t)
t' = sqrt(1−(v/c)^2) (t − v/c^2 x)

Set x' = 0 and eliminate x!