

Re: answer to YBM's bell problem

Source: <http://sci.tech-archive.net/Archive/sci.physics.relativity/2008-09/msg00806.html>

- *From:* YBM <ybmess@xxxxxxxx>
 - *Date:* Thu, 11 Sep 2008 23:12:49 +0200
-

rbwinn a écrit :

On Sep 11, 12:34ýpm, YBM <ybm...@xxxxxxxx> wrote:

....

The rays of light will not meet at the origins of both frames of reference. ýSo from A, an observer will only observe the bell in A to ring, from B an observer will only observe the bell in B to ring. ýWith my equations, the bell in A will ring first, then the bell in B. ýYou will hear both bells in both frames of reference.

Now, YBM, explain the same events using the Lorentz equations.

I did here

[:http://groups.google.com/group/sci.physics.relativity/msg/a39fe2523de...](http://groups.google.com/group/sci.physics.relativity/msg/a39fe2523de...)

There is no such absurdities in SR : for SR, the bell rings in both frames... It just happens that in frame B they were emitted at coordinates $(-a/\sqrt{1-v^2/c^2}, 0, 0)$ at time

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$va/(c^2*\sqrt{1-v^2/c^2})$
for the
"left" light
ray, and :
 $(a/\sqrt{1-v^2/c^2},0,0)$
at time
 $-va/(c^2*\sqrt{1-v^2/c^2})$

Uh huh. ý

Is there something you don't understand above ?

But if you put a bell at the origin of each frame of reference, what will happen?

Robert B. Winn

So it is quite certain that you didn't read.

No, I read it, YBM. ýSo explain what happens if there are two bells,
one at the origin of each frame of reference.

Look carefully at the coordinates of events I've provided above. Then figure out yourself :
– at what time in B does both light rays have been emitted ?
ý ýare they the same ?

Because of relativity of simultaneity that the Lorentz equation require, the beams of light are not emitted at the same time in B.

right.

Therefore, according to you only the bell at the origin of A will ring as observed by the observer in A.

– are the positions of the points of emission in frame B symmetric
ý ýwith respect to the origin of B ?

The points of emission are equal distances from the origin of B.

right.

– given that velocities of the light rays are c and $-c$ in B
ý ýare they going to meet at the origin of B ?

I say they will, but the Lorentz equations say they will not.

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At least you should notice that the Lorentz equations are perfectly coherent.

If you
have a bell at the origin of A and a bell at the origin of B, only one
of the bells will ring.

You mean according to LT, right ?

So, now you "theory" says : both bells will ring, right ?
(even if this not what your formulas implies).

This is sooooo utterly absurd that I suggest you to take
a rest and think a bit about it.

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