Re: The Nanometre Twin

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2007−10/msg01440.html

- *From*: "Sue..." <suzysewnshow@xxxxxxxxxxxx>
- *Date*: Sat, 27 Oct 2007 22:51:04 −0700

On Oct 28, 12:35 am, Tom Roberts <tjroberts...@xxxxxxxxxxxxx> wrote:

> Peri of Pera wrote:
>
> > Bertie is 1.8m tall and weighs 60kg. In 2110 when he is 30 years of age, he leaves on a spaceship to destination xyz in our galaxy. On board, Bertie is in suspended animation with his body positioned in the direction of motion. The speed of the spaceship is of a magnitude to affect time, length and mass by a factor of 10. The trip to xyz and back lasts 100 earth clock years but on his return Bertie should be only 40 years of age due to the time dilation he experienced in space. He should be 18cm tall and have a mass of 600kg according to the contraction and mass increase effects of special relativity.
>
> No. You are confusing effects on INCREMENTAL MEASUREMENTS with accumulated values.
>
> Note: you cannot use "suspended animation" (whatever that means), because it presumably affects Bertie's biological age, which is the center of your question. So I ignore that.
>
> Age: Bertie will accumulate 10 years of proper time during his journey, and will be 40 years old when he returns. When he returns AND COMES TO REST in the earthbound inertial frame, he will age at the same rate as everyone else on earth. His elapsed proper time (age) is ACCUMULATED, but the RATE at which he ages is an INCREMENTAL measurement.

What does biology (age) have to do with the resolution of SR's posutlates?

<<there is not the least incompatibility between the principle of relativity and the law of propagation of light >>
http://www.bartleby.com/173/7.html

<< Figure 3: The wave impedance measures the relative strength of electric and magnetic fields. It is a function of source [absorber] structure. >>

Formerly: http://www.conformity.com/0102reflections.html
http://www.sm.luth.se/~urban/master/Theory/3.html

> Length: during his trip, if Bertie lies down parallel to his direction of travel, he will BE MEASURED to be 18cm tall by an earthbound observer, using the usual co−moving assistants in the earthbound inertial frame to make the measurement. If he stands or lies perpendicular to his direction of travel, that earthbound observer and assistants will measure him to be 180 cm tall. But when he returns AND COMES TO REST in the earthbound inertial frame, that earthbound observer and assistants will measure him to be 180 cm tall regardless of his orientation. This is so because the height of an object is INTRINSIC, and is not an accumulated property (i.e. not accumulated over a trip like this).

Is that in 3−space or 4−space?

<< Since time is dilated by a factor gamma in a moving frame, the volume of space−time can only be preserved if the volume of ordinary 3−space is reduced by the same factor. As is well−known, this is achieved by length contraction along the direction of motion by a factor gamma. >>
http://farside.ph.utexas.edu/teaching/em/lectures/node114.html

Sue...

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