Re: What is Proper Time?

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2008−03/msg00960.html

- *From*: The Ghost In The Machine <ewill@xxxxxxxxxxxxxxxxxxxxxxx>
- *Date*: Sun, 9 Mar 2008 20:59:27 −0700

In sci.physics.relativity, HW@....(Dr. Henri Wilson)
<HW@>
wrote
on Sun, 09 Mar 2008 21:29:28 GMT
<gpk8t3lg0akfigbrgo54ptls9dith43aq0@xxxxxxx>:

> On Sat, 8 Mar 2008 16:48:26 −0800, The Ghost In The Machine
> <ewill@xxxxxxxxxxxxxxxxxxxxxxx> wrote:
>
> > In sci.physics.relativity, HW@....(Dr. Henri Wilson)
> > <HW@>
> > wrote
> > on Sat, 08 Mar 2008 22:58:20 GMT
> >
> > > Even if the source was moving it would make no difference.
> > > It would simply mean that the light speed around the
> > > apparatus was c+v instead
> > > of c.
> > >
> > > > If one uses a spinning device to feed the
> > > > MMX, of size
> > > > about 10cm in diameter and running at
> > > > 12,000 RPM, the edge
> > > > speed is about 63 m/s, or 2.1 * 10^−7 c.
> > > > Bouncing light
> > > > off this device (assuming the edge is rotating
> > > > in the
> > > > opposite direction of the beam, in an attempt
> > > > to slow it
> > > > down) should result in something like the
> > > > following:
> > > >
> > > > lambda/lambda_0[*] nu/nu_0 c/c_0
> > > >
> > > > nBAT: 1 1 − 2.1 * 10^−7 1 − 2.1 * 10^−7

> SR: 1 + 2.1 * 10^−7 1 − 2.1 * 10^−7 1
> Androcles: 1 − 2.1 * 10^−7 1 1 − 2.1 * 10^−7
> BaTH: ? ? ?

Shouldn't you double the value?

Nope. Mathematically, v = lambda * frequency.

S−−−−−−−−−>c−−−−−−−−−−−−−−−−−−−−−−−M<−2.1E−7c
O−−−−−−−−−−−−−<4.2E−7c−−−−−−−−−−−M<−2.1E−7c

speeds are shown relative to S/O.

Could you clarify this diagram, please? What do these values relate to?

BaTh says the same.

It can't say the same. All other theories are distance−independent. In other words, for both nBAT and SR the values of lamba and nu are the same regardless of whether I'm 1 meter, 1 lightyear, or 1 billion lightyears away (assuming no other artifacts exist that slow down or speed up light using gravity or other such).

Since BaTH is clearly distance−dependent from your statements, I can't say it's equal to anything.

Ghost, BaTh is quite simple.
Doppler shift is relative speed dependent.

Correct; always has been, though one might quibble as to whether we're discussing frequency ratio or wavelength ratio.

SR has both; Androcles' variant changes wavelength only; standard Newtonian changes frequency only.

It is not distance dependent, except in so far as light speed might change over distance.

If a wave changes speed over distance, either the wavelength or the frequency or both have to change.

If one vibrates a medium with a frequency f, and the velocity of the wave in that medium is v, what is the wavelength? Simple: w = v * t, where t = 1/f, as frequency is specified in Hz, the reciprocal of seconds. For example, standard power in the US is at 60 Hz −− 60 cycles per second.

If v changes, of course, one or both of w or f has to change.

A corollary, of course, is that, since w = v/f, v = w * f. This corollary can be used and has been used to measure lightspeed.

> Measuring doppler shift tells us nothing except the speed of the wheel.
>
> If the above wheel was set up on top of a high mountain and used to reflect a
> pulse from a laser 30 km away, the reflected pulse would travel at 1.0000042c.
> The travel time difference when the wheel was and was not rotating would be
> about 4E−11 seconds.
>
> This experiment might just be possible with the latest lasers, PMs and clocks.

OK. And if the laser was 15 km, 60 km, or 400,000 km away?

The laser will have to be pretty powerful if the reflected pulses are to be observed. Also dispersion will likely make each plse hardly recognizable. ...but hte experiment MAY be possible. Faster rotational speeds may also increase the time differences but will also reduce the energy in each pulse.

> His animation uses a source 'at rest' and two observers moving in oppposite
> directions. Naturally, they measure different times for light to travel the
> same distacne.

> > As they should, if the observers are moving at different speeds.
>
> That's right. But that's not what Einstein's clock synching was all about.
> His mirror/observer was at rest wrt the source/observer.

Doesn't have to be.

> A−−−−−−−>c−−−−−−−−−−−−−−−−−−−−−−c<−−−−−−−B
>
> A and B are mutually at rest.
>
> Light moves at c in both directions.
> Travel time is D/c in both directions.
> Androcles is very confused.

But Androcles is also correct! Light from A−B−A does not have to travel such that t(A−B) = t(B−A). This is routinely observed when an airplane meets a head− or tailwind, and is known (AFAIK, anyway) as the "headwind problem". Another variant is a canoe traveling between two buoys stuck in a river.

Of course it depends on the theory one is using; SR makes the explicit assumption that t(A−B) = t(B−A). This is Einstein's implied Third Postulate, and is not unreasonable but is hard to verify directly.

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> www.users.bigpond.com/hewn/index.htm
>
> Einstein's Relativity is easy to understand if one has the IQ of a parrot and a gullibility index >0.95.

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#191, ewill3@xxxxxxxxxxxx
Linux. Because life's too short for a buggy OS.

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