Re: Einstein's Relativity Disregards the Doppler Effect?

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2007−04/msg00251.html

- *From*: "harry" <harald.vanlintelButNotThis@xxxxxxx>

- *Date*: Tue, 3 Apr 2007 11:35:50 +0200

<guskz@xxxxxxxxxxx> wrote in message
news:1175571199.805848.225470@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

> On Apr 2, 8:29 pm, karandash2...@xxxxxxxxx wrote:
>
> > On Apr 2, 3:56 pm, "g...@xxxxxxxxxxx" <g...@xxxxxxxxxxx> wrote:
> >
> > > On Apr 2, 6:51 am, "harry"
> > > <harald.vanlintelButNotT...@xxxxxxx> wrote:
> > >
> > > > Guskz wrote:
> > > > <g...@xxxxxxxxxxx> wrote in message
> > > >
> > > > news:1175464481.663848.294410@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> > > > On Apr 1, 5:45 pm, "g...@xxxxxxxxxxx"
> > > > <g...@xxxxxxxxxxx> wrote:
> > > >
> > > > > http://en.wikipedia.org/wiki/Aberration_of_light
> > > > >
> > > > > Quote:"At the instant of any
> > > > > observation of an object, the
> > > > > apparent
> > > > > position of the object is
> > > > > displaced from its true

position by an
amount which depends upon
the velocity of the
observer."
_____

I don't know if I made a mistake and the
above is only for
celestial(orbiting)planes vs observation.

Therefore perhaps the word "aberration"
should be skipped and instead
wouldn't a doppler effect on light (frequency
spectrum shift) also
affect the calculations on the speed of light
and the calculations on
Time (say the Twin Paradox for example)?

Meaning depending on the direction of the
observation on light
through
an intensed doppler effect the light would no
longer be observed as
light (although it speed remains constant)
but instead as perhaps a
sound wave (if moving away from observer)
or alpha wave (if moving
towards observer)?

Would these affect the calculations on
Einstein's Relavitiy (Time and
c)?
_____

In short, no.
See for example Einstein in 1905 on
Doppler:http://www.fourmilab.ch/etexts/einstein/specrel/www/,
paragraph 7.
Harald

Thanks Harald.

It says at the end of Einstein's 7. Theory of Doppler's Principle and
of Aberration" that quote: "It follows from these results that to an
observer approaching a source of light with the velocity c, this
source of light must appear of infinite intensity."

Imagine that your clock slows down to stand−still. How much energy will you receive per second on your clock?

So from the equations at the location you gave me above, I believe the
equations tell us that:
1. the intensitiy increases,
2. the velocity remains constant,
3. the frequency shifts
4. and the objects percieved angle trajectory changes?

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What I don't understand exactly is say someone is sending me an
"S.O.S" signal through a series of light pulses therefore the INITIAL
Electro−Magnetic signal will reach my eye within the constant velocity
of "c" time delay but then the actual information (the frequency)
through pulses will either slow down or increase (depending if I'm
approaching or moving away (= doppler))?

That is standard Doppler.

So the time delay of the initial EM signal always remains the same
since "c" is constant (regardless of doppler effect) but then the time

> delay of receiving the entire S.O.S will vary (based of on doppler
> effect) ...that seems a little strange (Un−even)?

Also in standard (classical) Doppler: when an emitting source approaches you, you will receive a higher frequency. Do you think that that's strange?

[...]

> Actually I think I misread Einstein's doppler equations, it seems the doffler effect seems to reverse as v nears c therefore the frequency and abberation return to normal(back in phase??) = strange???
>
> at: http://www.fourmilab.ch/etexts/einstein/specrel/www/
>
> cos theta' = −v/c f'=f X sqrt((1−v/c) / (1+v/c)

For v=c theta is 0 and for phi=0, f ' = 0, which is also not "back in phase". Obviously, here positive velocity means motion away from the source (see his remark just below that equation). Also, in case you really delve deep into this part: for stellar aberration, his v ("relatively to the source of light") should be replaced by the velocity relative to the used constant inertial system of coordinates (typically the sun). The varying speeds of double stars do not affect the aberration angle.

> Can anyone explain the "logic" behind this phenomena?

If you understand classical Doppler and classical aberration, then you can obtain the relativistic ones by simply adding (multiplying) the effects of time dilation and length contraction. I think that Einstein explained that also in 1907, but I don't have the reference handy.

Harald

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