

Re: evidence for the existence of the ether

Source: <http://sci.tech-archive.net/Archive/sci.physics.relativity/2004-12/3913.html>

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Date: 12/10/04

Date: Fri, 10 Dec 2004 04:50:08 GMT

Thomas Clarke <tclarke@ist.ucf.edu> wrote in message
news:55d55608835ead79bd4f90b464a458b6.128340@mygate.mailgate.org...

> "greywolf42" <mingstb@marssim-ss.com> wrote in message

>> Thomas Clarke <tclarke@ist.ucf.edu> wrote in message

>

>>> *Since the fluid has zero viscosity there is*

>>> *no resistance to any convective flow caused by thermal differences*

>>> *hence thermal differences must be zero, therefore the conductivity*

>>> *is infinite.*

>

>> *A reasonable chain of logic. However, you are laboring under a*

>> *misconception. And this is what I was pointing out, when you raised the*

>> *issue of truly infinite physical terms. There is no such thing in the*

>> *real universe as a truly infinite term. And the corrolary is that*

>> *thermal differences (the inverse of your assumed physical infinity)*

>> *will not be truly zero. They will merely be very small --*

>> *but not fundamentally zero.*

>

> *OK, so since your ether would then be non-ideal, it would have*

> *for instance non-zero viscosity, what observable effects do*

> *you predict?*

The effects listed below, of course.

The aether *is* as superfluid. It has essentially zero viscosity. But no
real medium has zero *dynamic* viscosity.

For example, how fast do you expect signals to travel through laboratory
supefluids?

>> *In discussions of*

>> *aether theories, this is often called "Feynman drag". And it has been*

>> *observed as Pioneer drag (within a factor of 2 of the standard Feynman*
>> *drag predictions).*

>

> *There are alternative explanations for these two data points.*

> *Any other supporting data.*

???? Feynman drag is not a "data point." It is a theoretical prediction, used to "pan" aether theories for decades. Pioneer drag is simply direct observation that such predicted "drag" occurs at the level predicted for non-orbital motion.

You are free to speculate about other, ad hoc, causes of Pioneer drag. But only aether theories predicted the effect, and link the values with a calculable value.

> > *In addition to impact resistance, conductivity is limited by the
> > particle exchange time. In normal, everyday materials, the speed of
> > motion of the component particles is not the limiting effect on
> > thermal conductivity.*
>
> *Actually it is. Thermal conductivity in non-metals is due to
> propagation of phonons and phonons travel fastest in diamond which
> has the highest thermal conductivity.*

And would be even faster in a superconductor? Approaching the speed of light, correct? But never truly infinite, correct?

>

> > *My current favorite theory has the speed of gravity at $\sqrt{3} c$. But
> > the speed of light is adequate for demonstrating the principle --
> > and is consistent with GR's speed of gravity (c).*
>
> *Do you have a reason for why your favor $\sqrt{3} c$?*

Yes, Maxwell's EM equations and Maxwellian particle fluid theory. The transverse wave speed in such a fluid is typically $1/\sqrt{3}$ times the average speed of the corpuscles. And the average speed of the corpuscles would be the speed of gravity.

>

> > > *Rather a difficult thing to do, introducing a mass the size of
> > > Jupiter instantly.*
>
> > *True, but no more difficult than creating any size mass or charge in any
> > other teaching example on speed-of-propagation.*
>
> *I don't recall such teaching examples. Ones I have seen involve
> motion of bodies.*

Then....

> > *You can dispense with the
> > instantaneous introduction, if you wish. Its only purpose was to allow*

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> > *me to set up a perfectly uniform temperature, without matter.*

>

> > *What effect does Jupiter have on the temperature of the ether?*

>

> > *Sorry, I was unclear by skipping a step. All matter (mass) absorbs*

> > *energy and momentum from the aether fluid. This is the source of*

> > *gravitation.*

>

> *You differ from Rado in this.*

There are numerous variants on aether theory. However, all particulate gravitational aethers require the exchange of energy and momentum from the aether corpuscles by matter. Some theories postulate that this includes the absorption of the corpuscle. Others include only an exchange of energy and momentum (without removing the corpuscle from the fluid).

> > *I*

> > *am also assuming that the aether for Maxwell's equations (EM) is the*

> > *same one as the aether for Le Sagian gravitation. (Some people like*

> > *to assume two interpenetrating aethers.)*

>

> *Two ethers?*

> *Why not four or ten?*

Because we are only examining two known effects, EM and gravitation.

> *(10 is facetious, slight string theory allusion, but it seems that three*

> *of four would be good for dealing with generations of elementary*

> *particles or with types of force.)*

I personally prefer Ockham's Razor. One seems to do fine for all four of the "four forces."

> > > *Actually you are sounding like a relativist, arguing that conductivity*

> > > *must be finite because the speed of propagation is finite.*

>

> > *Though most Relativists retch at the thought, there is a lot of shared*

> > *mathematics between GR and Le Sagian aether theory.*

>

> *Of course, the Lorentz transform is needed if a theory is to have any*

> *hope of matching observation.*

Actually, there has never been an experimental test of the Relativists' "Lorentz transform" versus Lorentz's (non mirror-image) equations. We have never moved our accelerators at relativistic speeds relative to our detectors. So precisely to which observation(s) are you referring?

> > > > *Let's look at this another way: This lump of matter is *not* pure*

> > > > *aether, and interacts with the moving aether particles (causing*

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- > > > > gravity and "anomalous" heating of the added planet).
- >
- > > > You are assuming lots of stuff here that I don't know about since
- > > > I don't subscribe to your theory.
- >
- > > Fair enough. However, we are discussing whether the particulate,
- > > superfluid aether *theory* is perfectly isothermal, or not. Hence,
- > > we must discuss the properties of the particulate, superfluid aether.
- >
- > So discuss away, but don't forget you are addressing someone ignorant
- > of your theory.

I'm attempting to do so. And will answer any questions that you have, to the best of my ability.

- > It occurs to me that what you have is a body of superfluid large enough
- > for light propagation delay to be significant.

Well, a gas of superfluid. Not a compressed superfluid, as in a neutron star.

- > I doubt if anyone has
- > calculated in conventional theory how such a body would behave ---
- > hmm maybe in neutron stars. I think I have read that neutron stars
- > are superfluid and they are several miles across.
- > So you are in an unknown realm with such large size blobs of superfluid.

Well, we aren't dealing with "liquid" superfluids. But the realm is well-known. It is fairly well described by Maxwell's equations.

- > > > > So, energy is being removed from
- > > > > the aether medium that surrounds the planet. When you remove energy
- > > > > from the medium, you are lowering it's temperature in the immediate
- > > > > vicinity of the planet.
- >
- > > > If you say so. But I could imagine the planet causing compression
- > > > and heating the ether.
- >
- > > I'm not sure how such an assumption could have a physical cause.
- >
- > The planet displaces the ether where the planet used to be compressing
- > the ether surrounding it.

I'm not aware of anyone championing such a version these days. The versions of matter "ploughing" --- unchanged --- through the aether were mostly strawmen for the opposition, after the MMX.

- > > If you
- > > were correct, however, light would be observed to bend *away* from a
- > > gravitating mass. Which is not observed. So, I think we can table your
- > > idea for the moment.

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- >
- > *I don't think you need an ether at all for that effect.*

Fine. But since the "effect" of light bending *away* from a planet is not observed, I have no objection.

- >
- >> *My apologies if I was not clear. The planet will radiate a blackbody*
- >> *(thermal) spectrum of light waves. (Or some variant on blackbody, due*
- >> *to it's component chemistry). These organized waves will travel*
- >> *through the aether.*
- >
- > *[There's another possible think that might heat the ether!]*

Excellent! You spotted it before I got there! This is addressed at (A), below.

- >> *The energy for these organized waves originally comes from the*
- >> *random (unorganized) motions of the superfluid corpuscles.*
- >
- > *In your theory everything is ether corpuscles?*

In a similar manner that all matter is made of atoms.

- >>> *But it does still seem to me that within not too many years*
- >>> *whatever disturbance was caused by instantly putting Jupiter in*
- >>> *place will have died out.*
- >
- >> *The Jovian planet will continue to absorb momentum and energy from the*
- >> *medium. It will be a constant local energy sink. No matter how much*
- >> *the universe *tries* to equalize the temperature, it cannot do it*
- >> *completely.*
- >
- > *Why not?*

Because the gravitating body is constantly removing energy from the location. You can reach a stable state, but it won't be isothermal (equal temperature everywhere). In the same manner that a bar of iron is never equal temperature between a constantly cooling radiator and an "infinite" heat source.

- >> *Similarly, if one "suddenly" puts a wind turbine on a hillside, the*
- >> *local windspeed will always be less than that of the surrounding area.*
- >> *The wind will always be less, because the wind turbine is a constant*
- >> *sink in the otherwise uniform flow.*
- >
- > *The energy of the wind comes from the sun which comes from the fusion*
- > *of hydrogen left over from the big bang. It is not just wind energy*
- > *that somehow just does not die out.*

True, but irrelevant. No matter what the original source of the motion of the (constant or infinitesimally slowing) wind, the wind down stream of the windmill will always be slower than the incoming wind.

> > > > *The *random* motions*
> > > > *of the aether particles will remain just slightly less (cooler) than*
> > > > *the surrounding medium. And we all know that a cooler gas will*
> > > > *have a slower wave speed.*
>
> > > *Oh, you are trying to explain light bending due to gravity.*
>
> > *Yes. That *was* the initial point that I provided. The issue of a*
> > *perfect isothermal aether was raised by David Evans because he*
> > *thought this would disprove the bending of light by the changes*
> > *in local values of the medium (temperature in this case).*
>
> *It sounds to me like he has a case.*

On what basis? The aether isn't perfectly isothermal. Because there is a finite speed limit to conduction.

> *Do you have a numerical model with conductivities and energy sources*
> *etc etc to show that the temperature gradient is maintained?*

Try any basic physics textbook that deals with temperature gradients during conduction between hot and cold regions.

(A)

> > > > *Let me also anticipate the objection that this will cause the*
> > > > *universe (aether) to "run down." This is not so, because light*
> > > > *waves aren't the perfect entities that QED mathematicians*
> > > > *postulate. Because the aether is not perfect, there is a*
> > > > *very slow return of organized wave energy to the*
> > > > *random energy of the medium. It's called "tired light," and is an*
> > > > *unavoidable consequence of the finite speed of the aether*
> > > > *corpuscles. Over the extent of the universe*
> > > > *(a few billion parsecs), the energy remains in balance.*
>
> > > *Do you have equations that give quantitative predictions for these*
> > > *effects rather than just words?*
>
> > *Yes. For example, see the book "Pushing Gravity", "Deriving*
> > *Newton's Gravitational Law from a Le Sage Mechanism".*
>
> *Alas, our library does not have the anthology in which those appear.*
> *Are they webbed?*

No, sorry. Copyright forbids.

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- > > *Now, is my demonstration clear? The difference between reality and pure*
- > > *conceptualizations (i.e. infinities).*
- >
- > *Slightly plausible, but not convincing.*

I'm not attempting to convince you of the truth of the theory. However, as soon as you accept that the real world does not transfer information infinitely fast (and/or cannot actually contain true infinities), then you will eventually come to the conclusion yourself that a superfluid aether is not infinitely conductive. Hence, it cannot be perfectly isothermal at scales larger than the transfer time.

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greywolf42
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{remove planet for return e-mail}