

Re: Detecting Space-Time

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Androcles" <dummy@dummy.net> wrote in message
news:84amd.21591\$P7.11211@fe2.news.blueyonder.co.uk...> "jahn"
<susyshow@yahoo.com.au> wrote in message
news:2vrsp1F2ppks0U1@uni-berlin.de...

"Androcles" <dummy@dummy.net> wrote in message
news:E11md.17469\$P7.708@fe2.news.blueyonder.co.uk...

"jahn" <susyshow@yahoo.com.au> wrote in message
news:2vq740F2pes1kU1@uni-berlin.de...
[snip] <http://farside.ph.utexas.edu/teaching/3021/lectures/node60.html> cgs
 $\mu_0 = 4\pi \times 10^{-7}$ henry per meter.

Yes, but what does this have to do with spinning electrons?
Absolutely nothing. It is pure coincidence that the poles of an electron
seem to always correspond to the poles of a solenoid wrt the charge's
direction of motion.

What poles of an electron?

The ones that exclude Wolfgang from the theatre?

My Floridian girlfriend happens to be of Polish descent.
It's not her fault.

<< Electron spin resonance (ESR), magnetic resonance phenomenon involving
the electron spin. MR imaging and MR spectroscopy rely on the resonant
behaviour of the atomic nucleus in an external magnetic field. A similar
phenomenon occurs with the electron.

Although most electrons exist in pairs with no net spin, electron spin
resonance may be observed from the unpaired electrons that exist, for
example, in free radicals. The ESR phenomenon occurs at much higher
frequencies than the NMR phenomenon, and therefore the technique is
inherently more sensitive than its nuclear equivalent. In principle, the
methods of MR imaging can be applied to ESR, but such experiments are
hampered by very short relaxation times, typically in the microsecond range.
An alternative approach is to administer free radicals such as nitroxides
and, by the Overhauser effect, enhance the proton polarization in a

proton/electron double resonance experiment. Such experiments have been proposed for very low field imaging. PS The Encyclopaedia of Medical Imaging Volume I

<http://www.amershamhealth.com/medcyclopaedia/medical/volume%20I/ELECTRON%20S PIN%20RESONANCE%20%20ESR%20.ASP> Note that free electrons in conductors, accelerators CRT's etc are "unpaired"

> : >

> : > *Yeah yeah.. and note that we orginally began with light*

> : > *traversing nothing.*

> :

> : *Yes... and you are protesting because I say it behaves*

> : *differently travsering nothing than in traversing something.*

>

> *Well, we know it traverses something at a fixed velocity*

> *depending on the something and relative to the something.*

> *I'm not disputing that. Refraction is the evidence.*

> *If there is any disagreement between us it is the different speeds*

> *it can traverse the nothing. You seem to be upholding all*

> *the "something" evidence to support your PoV, and not*

> *addressing the "nothing" evidence.*

Only because the vacuum evidence doesn;t exist. Even if you achieve a hi quality vacuum the emitter, detector and envelope if required is an electrostatic impurity.

> http://www.androcles.pwp.blueyonder.co.uk/actual_data.htm

> *Surely you realize that with more than one speed in the nothing,*

> *permeability and permitivity of free space become meaningless?*

That is like saying the coverage of the inside of a sphere depends on the nozzle velocity. Unless the paint can reflect back into the container then the coverage is 100%. EM waves don't return to the emitter unless reflected by matter. You may be looking at the SI definitions which incorporate SR. The cgs values are from the properties of a sphere. You'll recognize 12π from spherical geometry.

> :

It is due the Hilbert Jackpot function. Millions of observations have shown this relationship but it is surely random chance running afoul. ;–)

It works for light years just the same as for millimeters.

There is no requirement for the electrons in the conductor to spin.

What happens when they stop? {rhetorical}

I'll give a rhetorical reply. Would there still be years if the Earth kept one face to the Sun as the Moon keeps one face to the Earth? How about if it kept the same orientation with respect to the stars?

That is a rectal reply. The earth will still have its identity as a planet. The electron will shine itself away as gamma radiation.

Didn't know the electron had a vote.

We know that Mr Positron and Miss Electron will elope when married, giving birth to a pair of wayward gamma children inheriting DNA from both parents, but I STILL don't see why you are putting spin on it before the dance begins.

So thick black smoke won't pour out of the ESR machines that your local radiologist just acquired. Besides... ya don't want to mess with the ghost of anybody named "Wolfgang".

Something makes light traverse nothing. I still say that is an E–field alternating with a B–field, so there!

It is a fine, but important point. At this level it is hard to say an electron is matter or energy. Hard to say magnetism is a field, or a perturbation of a field.

One way to break the deadlock is to try and explain the electric field in terms of a magnetic field. I think you find it gets extremely complicated.

>

> *Generator.*

> *Transformer.*

> *Dynamo.*

> *Phase shift.*

Power factor correction capacitor

R +j0

...don't see too much stuff like that in free space tho.

> *I am not attempting to explain how or why a changing magnetic*

> *field produces an electric field, anymore than I'm attempting*

> *to explain why an apple falls. It does! That's observation.*

>

> *: Nature likes sphere's 'cause she only has one number to*

> *: remember. Tom will confirm... that is all the RAM*

> *: she has left after Einstein's field equations are loaded. ;–)*

>

> *Nature doesn't use parabolic mirrors either, but she responds*

> *to them in a predictable manner. We don't know the exact*

> *mechanism by which an electron will change state and release*

> *a photon, quantum theory doesn't prevent an infinite spectrum.*

By atomic emission. !!!

> *Only the spectrum of a number of elements display fixed*

> *frequencies. Using the Bohr model (and recall it is only a model)*

> *of the atom, how far does the electron move around the nucleus*

> *as the photon is released? What direction does the photon take?*

<-- Oo. @ .oO --> circular polarization

- > *If we play with spirographs we start with a circle (one centre)*
- > *then an ellipse (two foci), so three and four foci and so on are*
- > *not only possible but probable. The Moon's orbit about the Sun*
- > *is a 13-sided circle, for example, in the same sense that a simple*
- > *ellipse is a 2-sided circle.*
- > *For a photon release, there has to be finite time of release (recall*
- > *frequency) and finite movement of the electron around some*
- > *part of its orbit (wavelength, perhaps) and the two combined*
- > *produce the characteristic velocity c, maybe. After that, the*
- > *energy is on its own to be affected by other atoms it passes*
- > *in the vicinity of.*

> *I'll assume you really mean it is insignificant in the examples below.*
Nuclear spin is significant however.

The Sun spins. Being a fluid, not all latitudes spin at the same rate. I have yet to see any proof that the nucleus of the hydrogen atom is spinning, though. How fast does a deuterium nucleus spin, and which axis does it spin on?

Does this affect the field, producing Lagrange points now that we have three bodies, Electron, Neutron and Proton?

Does deuterium have any magnetic properties that differ from hydrogen?

<<The proton (1Hydrogen nucleus) is the most sensitive (apart from tritium) nucleus and usually yields sharp signals. Even though its chemical shift range is narrow, its sharp signals make proton NMR very useful.

<http://drx.ch.huji.ac.il/nmr/techniques/1d/row1/h.html> What did your search engine die of, atrophy?

A beam in the TV tube is a current and is deflected by magnetic attraction and repulsion.

Lorentz force perhaps ?

I don't care what names you give it. The deflection is real.
But Lorentz force is between massive entities not the divine guidance of space faeries. If you leave a hole like that some philosopher will try to drive a truck thru it... in reverse gear.

They are your fae.

Similar deflection by the charged plates of an oscilloscope cannot be magnetic.

Deflection by the magnetic yoke of a TV tube has to be.

Yes, I know there are coils to produce the field, but I'm talking about the field itself. How it gets there is irrelevant. It exists in a vacuum.

But does it exist absent a moving charge?

Does an electric field exist absent a moving flux?

YES!

Good. So a magnetic field can exist without a moving charge too.

We shouldn't exclude the possibility 'cause how could four generations of Minkowski etherians possibly be wrong? OTOH... they might be wrong about a lot of things.

Ditching SR doesn't fix Maxwell.

Something makes light traverse nothing. I still say that is an E–field alternating with a B–field, so there!

:

- > : *Sigh... whenever we study how something*
- > : *fundamental works, there is always something more*
- > : *fundamental to learn. ;–)*
- >
- > *Exactly. That is what I'm attempting to do.*
- > *We do not yet have all the answers, but do we have some wrong*
- > *ones.*
- > *Constant speed of light in all frames of reference is one of them.*

It is just a lame excuse to take the clock apart and see how it works.

- > *Permittivity and permeability of free space is another.*
- > *E and B fields in phase is a third.*
- > *I don't have the answers either. Help me out instead of fighting me.*

I'm not fighting ya. Try threading a needle with the hole L to R. It should produce howls of laughter as your mate see you miss by centimeters.

Charge two capacitor plates with a battery.
Measure the force between them with a fish scale.
Remove the battery.
What does the scale do when the battery is removed?
Measure the current through the disconnected battery or the disconnected capacitor (they should be the same)
and compute the force using Amperes law.
Compare your result with the scale's indication.
Again...
My fridge has magnets attached.
No current inside the magnet, Yes there is.
A charge in motion is a current.
Something makes light traverse nothing. I still say that is an E-field alternating with a B-field, so there!
> : Oh! That's easy:
> : While spin fairies and tick fairies are pure

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> : mythology, the tote faries are not. When you
> : see an action in one region of space affect
> : matter in another region of space, it is the dedicated
> : work of the tote faries. They have little tool boxes
> : in one hand an copies of MTW and Griffiths under
> : their arms so they can move things about according
> : to the experimenter's expectations. They get confused
> : sometimes tho when two people are watching. Usually
> : they will please the observer with the fattest purse.
>
> LOL! Yes, you could well be right.
>
> : >
> : > :
> : > : > and it is NOT a superconductor.
> : > : It is not a glass of chablis either.
> : > : You're a refrigerator abuser aren't cha?
> : >
> : > I keep beer in it. Chardonnay, Beaujolais and Champignon
> : > are for fungus eating visitors. The odd truffle is okay.
> :
> : Well, you're gonna have to be more generous with
> : whatever it is if you want me to go along with this
> : spin fairy notion of yours. Bribery will get you
> : anywhere.
>
> A chocolate-coated crunchy tote fairy (dead of course), perhaps?
> I'm all out of mashed strawberries and cream on frog legs
> and I planned on the pickled onions and icecream for myself.
>
Yuck!
Betcha I can measure the force without using fish, and it is more than your wimpy capacitor can manage. You manage a few scraps of paper, I can suspend a human being on a permanent magnet. Add up the Lorentz force of all the co-moving charges in the magnet and you'll see why.
<http://www.google.com/search?hl=en&q=orbital+nickel+cobalt+iron&btnG=Google+Search> Does mass exist?
What do we mean by "existence"?
Whadday mean "WE" Kimosabe?
http://www.planetmike.com/jokes/misc/the_lone_ranger_and_tonto.shtml The electron ceases to exist AFAIK when it shines away as a gamma. So does water when you cook it. We call that change of state. Where does the electron's gravity go?
B-field. Big time force.
E-field. Not so big.
G-field. Wimpy.
A lumpy magnet I can carry in one hand can outpull the entire Earth, and you are saying that's because of some tiny spinning electrons that can barely manage to lift a scrap of paper. Electric repulsion is what keeps a Blacksmith's anvil from touching the floor and you have never seen magnets get close enough to overcome that force.
<http://www.almaden.ibm.com/vis/stm/gallery.html>
<http://www.almaden.ibm.com/vis/stm/library.html> I can put your puny little anvil on this.
<http://www.newscientist.com/news/news.jsp?id=ns99993153> Na nah nana nah. That's cheatin'. I'm tellin!
[wrap crap zap!] I never made then up in the first place, you did. Permeability of free space and her little sister, Permittivity. A right pair of fairies, they are.
Removing the mass component of the electron, we then have moving (set of)

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E-fields producing a magnetic field.
Massless charges Eh? Are they sold by the dozen?
Yep. 12 neutrinos + 12 photons per dozen, non-negotiable.
Using conductors once again, the windings in an electric motor should be spreading apart, so we use a glue to stick them together and pack them tightly in the (straight) slots.
That is my PoV that you are having so much difficulty with.
Are you saying that Amperes long wire law is backward?
I'm saying gold leaf electroscopes separate when you charge them with one of those E-fields that exist without a magnetic field.
Fair enough. So in a world where the best man gets the most votes in the electronic college you think the man with a magnetic personality should fare as well. Sadly Virginia... there is eevveeil in this world so things are seldom equitable.
<http://www.sorryeverybody.com/> Note the force when $q = 0$
<http://scienceworld.wolfram.com/physics/limq801.gif> From:
<http://scienceworld.wolfram.com/physics/LorentzForce.html> I am still unable to understand your PoV that the electron has to spin.
It is part of it's mechanism to contain it's 0.511 MeV.
<< On the other hand, when p/q is a fraction (and, in some cases, an odd integer) there is no simple "single particle" way to understand where the gap comes from. We now understand that these QHE's are spectacular signatures of complex many-body states whose existence relies totally on the Coulomb interaction between electrons. >>
<http://www.cmp.caltech.edu/~jpe/fqhe.html> Again, I do not see "spin" in your quotation.
Your PoV, as I understand it, is that electron spin creates a magnetic field. Now you are talking about half a million electron volts.
What IS it you are trying to say?
No ... Relative moving charges experience a Lorentz force. Unless their motion maintains their proximity, the force will diminish quickly.
Wasn't it $1/d^3$ or $1/4\pi d^2$ for a loop?
I fergit.
Me too.
Note that the effect of this definition is to fix the permeability of vacuum at exactly $4\pi \times 10^{-7} \text{ H} \cdot \text{m}^{-1}$.
http://www1.bipm.org/en/si/si_brochure/chapter2/2-1/2-1-1/ampere.html I note that the property you assign to nothing is actually a property of the field, not the nothing. You seem to be quite happy that nothing has properties, but unable to accept that fields can exist unless caused by spinning matter. If the nothing has properties of its own, why can't a field?
"Nothing" only has geometrical properties. Ya care to guess how they know the value isn't really
 3.9999999999π ?
Lobachevsky, last I heard. Reimann's value is 2.99999999 .
They took a spray can inside of a sphere and counted droplets.
;-)
Nah. that's $4\pi \cdot (r^3)/3$ Why didn't put that 30 lines ^ up where we needed it.
<http://www.mathstutor.com/Volume.html> 'Twas you, I recall who pointed out a sphere only has an axis if it spins.
Yep.
If all the magnetic fields we can observe are associated with a moving charge, I see no moving charges in my fridge magnets. Why do insist there are?
Because I can put a coil of wire around them and make them fall off by moving an equivalent amount of charge in the opposite direction.
> : > :
> : >
> : > Ah... so a spinning helicopter rotor is an anti-gravity device.
> : > Why do I have this strange idea that when your coil runs
> : > out of energy my magnets will will jump right back on again?

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> : Superconducting coils won't run out of energy.
> : Na nah nana nah.
>
> Drat. Got me... (almost).
> It's the permanent magnetic field that makes your spin fairies dance.
SAY AUNTIE ! ROFL :o)
it is no small assumption that some unknown property of space will substitute
for the spinning (circulating, orbiting)
entities when an EM wave is propagating far from any matter.
There seems to be an intuitive rejection of Huygen principle resulting from
similar reasoning.
<<Huygens's Principle:
every point on a propagating wavefront serves as the source of spherical
secondary wavelets, such that the wavefront at some later time is the
envelope of these wavelets. >>
<http://www.physlink.com/Education/AskExperts/ae471.cfm> Antenna radiate in
circles.
I agree with Huyghens.
The generated E-field, like the cork bobbing on water, is stationary with
respect to the source.
I agree with Huyghens.
The magnetic field travels radially, like the ripples on water.
I agree with Huyghens.
I do not agree with you that the radiation is caused by millions of corks on
the water spinning to make it happen.
So we don't need millions of spin fairies.
They are your fae, not mine.
I do not believe it because you have yet to provide any evidence to support
it, and I'm a stickler for evidence and abhor assumption.
It is you that has to provide a Lorentz force, absent a charge.
Not so. See Lorentz, it's not my force.
Burden of proof is upon the claimant.
Hmmm I tho't it was on the one with the biggest lawyers and the most money.
;-)
>
> That's cheating. Wahhh.....
>
Consider this:
Huygens and Feynman both produce good answers but are
logical nonsensese. Mathematically either is easier to model
than perturbations of E lines of force because the wave model
ensures conservation of mass and charge, on paper.
Coloumb lines can reach out just like gravitational lines to
convey a reaction force with any charged matter to establish
a speed of light dependant on the matter density of the region.
... exactly the behavior we observe between sea-level and
30,000 km or most of the solar system actually.

Imagine one of these things:
<http://www.magnet.okayama-u.ac.jp/magword/light/ehl.gif> where the H decays
but the E builds in the first few wavelengths.
Imagine a bright green flying elephant.
Then imagine the reverse process in the last few aperture-lengths.
Then imagine it laying and egg << Thus, in the antenna near field there is
stored energy. (The complex radiation field equations have imaginary terms
indicating reactive power.)
Figure 4 shows normalized power density for three different illuminations.
<https://ewhdbks.muqu.navy.mil/ANTNRFLD.HTM> There is oodles of stored energy
at the point where the rock hits the water, where the amplitude is at its
greatest.
"Reactive" is the key word. Also called "Apparent Power".
As you know, only near sighted mathematicians will complain if we

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"apparently" violate c , conservation of energy or charge.
(-1)^(-2) sprinkled over Maxwell's equations might even make them work without fiddling with your watch.
[Stump speech] Does this not remove some of the magic in Feynman's sum over paths technique?
Does this not eliminate the need for retarded potential and displacement current?
Does this not explain the near-field H predominance ?
Answered above.
Yep.
It looks like we are proxying for a Feynman-Huygens duel.
Nope. Bottom line, light propagates in nothing by an alternating B field and E-field 90 degrees phase shifted, That's how it leaves the antenna and *that's how it drives the next one. *
Yep.
In the near field or the far field?
Ya can't have both without spin faries. (ether)
> Why not?
The near field shows one E/H ratio, the far-field shows another, but reversing Tx and Rx positions, doesn't swap the near space for far space behavior. So if there are spin faeries, they apparently favor hanging out around radiators and absorbers.
... perhaps because spinning entities can be found there to help with the ambitious work load that Maxwell has set for them?
Weirder stuff happens when there is a medium involved (i.e. air, shape of antenna, and I'll leave you to nitpick the details of that.
:-)
Faraday rotation is probably the best example.
How do your vacuophilic spin faeries know to alternate the B field for H and V polarizations the same as in media...
But leave the CW and CCW polarizations untouched?
> Like I said, I don't know why the E-field is at right-angles to the B-field, and probably never will.
Well *IF* B fields can only exist in the presence of matter, then you can and do know. Also you may have a clue why we haven't been able to conjure up a pair of leptons from a pair of gammas.
> I do know that I can build an electric motor, though, and my vacuum sucks up your spin fae better than it does dust under my bed.
It's the tote faeries ya don't wanna mess wid. MTW feels like 2430 pages if a tote fariy hits you with a copy.
Sue...
[snip]