



Phase Coherence and the Inverse Square Law

and how everyone missed the manner in which these two are linked

a reply to BDJ, eating fish & chips somewhere in Cambridge, who told me to look into the derivation of the inverse square law

You will discover herein that the 4 fundamental forces are nothing but Fitzpatrick's **RPR** - - - **Relative Phase Relationships**.

After more than 4 decades of investigating the invisible fundamental forces I've come to the conclusion that **phase coherence** is the reason for **attraction** or **binding** in all the invisible forces.

As a young boy I read science books that were written over a hundred years ago that showed me how light intensity diminished as the square of the distance.

Newton has shown us how the gravitational force decreases as the square of the distance.

Thus, this inverse square law has been ingrained into the minds of everyone for centuries.

However, there are problems with this inverse square law. One of these problems with the law is that it pertains only to fields and there is now good and sufficient evidence that fields -- as continuous items -- do not really exist.

A bit before Einstein died in 1954 he said,

"I consider it quite possible that physics cannot be based on the field concept, i.e., on continuous structures. In that case, nothing remains of my entire castle in the air, gravitation theory included, [and of] the rest of modern physics."

Ah yes, but unfortunately fewer people were listening to Einstein anymore by 1954.

We are all still using the field concept very much today.

And this field concept is a problem; it's a very big problem.

Because today we know energy comes in quantum sized chunks. It doesn't come to us the way everyone thought it did in Newton's time when everyone believed these were really fields that varied as the square of the distance.

Niels Bohr won the Nobel prize by explaining that a

quantum of energy from a star came to our eye full strength with no energy, whatsoever, lost in that vast distance.

Neils Bohr saw the electron as a spherical entity with real spin and got the Nobel prize in 1922 by showing us how all the colors were made via electrons dropping an orbit and transmitting a quantum of energy to another electron that received that same amount of energy by going up an orbit higher.

Niels Bohr showed, beyond any doubt, that energy was exchanged via these quantum exchanging **pairs of electrons**. In fact this is quantum theory as we know it today.

Niels Bohr proved each quantum of energy is **not** diminished via the square of the distance.

So this gives us a problem with that old inverse square law, doesn't it?

The only possible way to rectify our understanding of all this is to do what Einstein said and forget entirely about fields. We must simply say that it is only the **number** of these quantum pairs of electrons that diminish as the square of the distance.

These quantum pairs give us light via binding energy.

But how is all this binding being done?

We'll have to look at it the way Bohr did almost a century ago considering, as Bohr did, that the spin of the electron is real but in a different spacetime realm. We also must remember that this spin in this different spacetime realm can be detected by us but we will never be able to directly measure it (Wheeler and Feynman).

Let's look at how this binding is being done with magnetism and sigma and pi chemical bonding. Let's remember too, what all the chemists know, that you can never have a pi bond unless you also have a sigma bond.

Everyone knows that the smallest element of magnetism is the spinning electron.

Electrons normally repel each other.

But there are two types of orientations where electrons attract other electrons in both magnetism and chemical bonding.

The stronger magnetic attraction and the weaker chemical bond is where there is *phase coherence* between the entire mass of both electrons. **This happens to also be** where both electrons *with the*

same spin have the same spin axis. This polar type bond is called a pi bond in chemical bonding.

The weaker magnetic attraction but the stronger chemical bond is when there is *phase coherence* between the closest sides of the two electrons when a spin up and a spin down electron are spinning in the same spin plane -- *their closest sides are engaging like gear teeth that are meshing, in phase, not clashing.* This equatorial bond is called a sigma bond.

And one thing more of supreme importance is that the strength of these bonds do **not** decrease with distance but, as [Dr. Milo Wolff](#) discovered, fall off entirely at the distance of the Hubble limit. **Only the number of these bonding pairs decrease with the square of the distance -- hence the inverse square law is not for energy but for numbers of individual quantum pairs.** (*energy exchanging pairs of electrons having a sigma type equatorial bond between them*)

In other words every sigma bond retains its full strength, through light years of space, all the way to the Hubble limit. [Here are 17,400 spots on Google telling you about this LONG RANGE phase coherence.](#) (Click link.)

This is why a quantum of light, from a distant star, comes to your eye full strength. Your eye needs

about 7 of these quanta -- *a change in binding of 7 electron pairs* -- to discern even the slightest bit of light.

You get a spark in the spark plug of your car **after** the coil disconnects from the battery. Your eye works similarly in that the quantum of light from a star appears in your eye **after** the electron in your eye disconnects its bond from the distant star and reconnects that **same strength bond** to another closer electron in your eye.

But now more about bonding methods: Why is the weaker magnetic attraction, in iron, also the stronger chemical attraction in other elements?

Ah, it's because Niels Bohr was closer to the truth 90 years ago than our quantum scientists are today. It seems that these electrons are really -- as Bohr thought -- spinning entities in orbits and not orbitals. They really have to be thought of as actually spinning and traveling around the nucleus for the stronger magnetic attraction to be the same orientation as the weaker chemical attraction. Here's the reason why:

The polar bond in magnetism is the stronger bond because not only the *closest sides* but **both** entire electrons are **constantly** in **phase coherence** with

each other but in chemical bonding the polar bonding of an electron below with one above it, can only happen when they are both perfectly lined up above and below each other on the same spin axis. And this is a very short portion indeed of their entire orbit time.

While the equatorial bond in magnetism is the weaker magnetic bond, it is the stronger chemical bond because the spins of both electrons, in a sigma bond, are in the same spin plane **constantly**. The closest sides of these two electrons are impedance matched, binding together, with a **constant phase coherence** type of sigma bond. The sigma bond -- unlike the pi bond -- is a **constant** bond. This is why you must always have a sigma bond before you can have a pi bond. It's the sigma bond that really establishes the construction form or symmetry.

I showed in [my first book](#) in 1966 how gravity could be unified with the other forces by using [Ampère's Relative Motion Laws](#) . and . <http://www.amperefitz.com/lawrm.htm> . and . [ampere's Laws](#) .

Since then I've recognized Ampère's Laws are showing me this is a frequency universe that is really obeying the following simple phase laws:

Our **space** is built up by the **average amount**

elements are *out of phase* with each other.

Repulsive forces are generated between elements that are *out of phase* more than this average.

While elements more *in phase*, than this average (**phase coherence**), produce **attractive** forces.

[Dr. Milo Wolff](#) discovered that both the electron and its spin were scalar resonances.

Our TIME is merely a phase relationship of the electron's main scalar frequency.

What we see as SPACE pertains to the electron's spin/orbital frequencies and star spin frequencies.

What we see as accelerated space (*gravity & inertial mass*) pertains to a quark spin frequency. All this I've covered in many of my other papers.

This is Fitzpatrick's **RPR** - - - **Relative Phase Relationships**. The surroundings must be included too (Mach's principle). So Ernst Mach was right after all.

So attractive or binding forces are caused via **phase coherence** not only as previously shown with the electron but with quarks as well. But that's another story.

You can read that other story by clicking the following link: <http://www.amperefitz.com/why.we.have.gravity.htm>

9-02-2010

e-mail **postscript** of the above paper:

>> to Fitz

From a quick glance, coherence does play a part, but it is implicit in the regular maths anyway. It may though have wider application in physics than is commonly acknowledged.

Brian

Ah but Brian,

What if all these things you see and even your space, time, motion and the math you use to describe what you see, are limited to a certain spacetime realm or certain frequency parameters --- a certain frequency bandsread --- the highest frequency being the orbital frequency of an electron and the lowest frequency having a time-period of many of those orbitals?

If this is the case, then we must listen to what Kurt Gödel taught us:

Those who cannot see outside of their subset bandsread may believe they have discovered universal laws when all they really have discovered are the rules for their subset bandsread and suitable math for describing only the things inside of it.

Once I saw that this was the case then I knew **another method** had to be developed to figure it all out.

I was indeed fortunate that my experience in life provided me the wherewithal to develop and utilize that **other method**.

Fitz

to Fitz

In reading your message, I came across 'Cold Fusion'. Again a topic in which I was involved at its beginning, especially with the Japanese people. Long ago. And with the formation of the New energy Times mag. I tend to believe it exists.

How about you?

Milo

On Sep 8, 2010, at 9:27 AM, Daniel Fitzpatrick wrote:

>Milo,

>Sure cold fusion exists but they are not getting the SPIN axis angles right for enough energy output.

>Here's the problem as I see it:

>You know that when an electron is shot into a magnetic field, it corkscrews. You also know surroundings are involved.

>For fusion, the hydrogen isotopes must come close enough together where they can be held together via phase coherence where their closest SPINNING sides are in phase (a form of sigma bonding).

>That same force that holds them together (phase coherence) is also attracting them together - - as long as their closest sides remain in phase.

>> BUT

>The surroundings are causing an inertial effect and like a force acting on gyroscopic inertia they are being twisted out of that attracting position.

Fitz,

to Fitz,

You are on the right track!

Spin may be the key to cold fusion because conventional physics and math does not include it or understand it. So none of the others have the right analysis.

Milo Wolff

To Milo & others,

SPIN, Yes it's All spin.

You and I know the ONLY two attracting electron to electron positions (in both magnetism and chemical bonding) are: **1.** Those on the same spin axis and **2.** Those spinning (with opposite spins) in the same spin plane.

It's phase not fields. Once you see exactly where electrons attract & repel then also you know exactly where stars & galaxies attract & repel. Newton didn't get it exactly right. Newton's fields won't explain QUASARS but phase certainly will.

It's their spin action with the surroundings that give them a gyro inertial effect.

Phase coherence shows you not only why you have gravity but in addition you get the answer to the problem Einstein tried to solve

You unify the forces then by giving all FREE spinning entities the same SPIN properties.

Please remember: Gravity, charge and magnetism are ALL nothing but phase relationships in regard to the *same frequency* surroundings (Mach's principle).

So for electrons, stars, galaxies and even super clusters THE SAME FORCE THAT IS PULLING THEM TOGETHER (remember, these have gyroscopic inertia) IS ALSO ACTING ON THE GYRO AND TWISTING THE SPIN AXIS OUT OF ANY ATTRACTING POSITION and more into an (out of phase) repelling position.

You end up seeing why all these FREE spinning things precess and repel, don't you?

385,000 spots on Google about Einstein's Cosmological Constant and this (phase) is the reason for it -- **finally.**

Fitz

to Fitz & Milo

. . . Anyway, if one of you knows how to make cold fusion produce a lot of energy as opposed to the hundreds of milliwatts typically produced, do let us know how to do it!

Brian

to Milo & Brian

Lisi calls his E8 model simple because it is in one single spacetime realm - ours (Electron orbital frequency realm or bandsread?).

But it could also be representative of the quark spacetime realm because not only are there more quarks than electrons but the higher the frequency the higher the energy and the lower quark harmonics are probably strong enough and low enough in frequency to be in our spacetime realm and to be sharing phase relationships with the electron. And we see this as charge.

I'm not the mathematician that you or Brian are but if Lisi's E8 model is correct then I'd be betting my money on it showing these quark-electron phase relationships where:

1. **In phase** (phase coherence) means **attracting** forces and
2. **Out of phase** by 180 degrees gives **repulsive** forces and
3. The average out of phase gives us what we see as space itself.

I like doing the easy things first. I'd be working on this and not cold fusion or fuel cells.

Fitz

to Brian,

You specifically mentioned the precession of Mercury, which only Milo Wolff's scalar, standing wave concept - with the surroundings being phase resonant - can explain.

You know we have sigma bonding so extend that to the surrounding stars - Mach's principle.

You also know the surroundings have a variety of frequencies to bond with.

As you increase the speed of something then you also are increasing all the spin frequencies of the spinning sides of electrons, quarks, etc. as seen by the closest sides of similar spinning entities in the surrounding stars.

You also know by increasing the frequency that you are also increasing the energy because energy and frequency are synonymous.

Therefore by increasing the energy of the item, by increasing its speed, what you are really doing is increasing its mass RELATIVE to the surroundings because of phase coherence with the surroundings - Mach's principle. BECAUSE NOW each of the spinning entities must impedance match with a higher frequency item (higher energy) in the surroundings than it did before it was accelerated: Thus the mass increase.

NOTE: this is a mass increase (frequency increase) RELATIVE to the way the surrounding frequencies see it -- a sort of **Doppler effect** seen by the surrounding stars. Thus we must use Einstein's relativity correction for this additional mass of Mercury to figure its

precession.

Ah yes, and it must be impedance matching because we know energy can neither be created nor destroyed necessitating an impedance match.

Ah, and impedance matching shows not only must it be phase coherence but it must also be a type of quantum phase coherence as well.

So, Brian, without a Schrödinger frequency universe, you can't even arrive at general relativity.

Helpfully yours,

Fitz

9-13-2010

To read more about PHASE click the following links:

<http://www.amperefitz.com/phase.htm>

and <http://www.amperefitz.com/aphaseuniverse.htm>

[Daniel P. Fitzpatrick Jr.](#)

Thank you,

Have a good day & visit my site at **goodreads**:

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<http://www.amperefitz.com/principle-of-equivalence.htm>

<http://www.amperefitz.com/acceleratingexpandinguniverse.htm>

<http://www.amperefitz.com/einsteins.cos.c.htm>

<http://www.rbduncan.com/schrod.htm> (This one shows the space we see is also nothing more than a phase relationship.)

[Over 4 Decades of Daniel P. Fitzpatrick's Books, Papers and Thoughts](#)

Over 4 Decades of Fitzpatrick's Books, Papers & Thoughts

<http://www.amperefitz.com/4.decades.htm>

