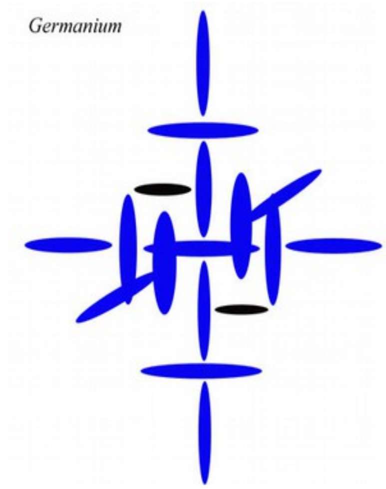
The Fractional Quantum Hall Effect

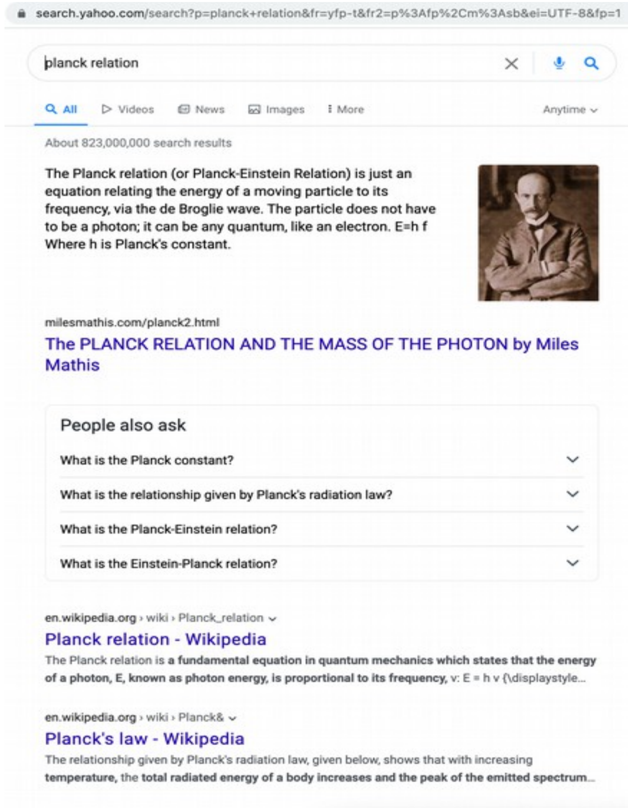


by Miles Mathis

First published April 14, 2024

The 1985 Nobel Prize went to the Quantum Hall Effect and the 1998 prize to the Fractional Quantum Hall Effect [FQHE], so you would think the prize winners would know a lot about these phenomena. In fact, they know nothing but the math, which as usual they have gerry-rigged to the data using quasiparticles and other cheats, ignoring the basic photon/charge field nearly completely. I have already published many papers that will help us solve this one very quickly.

In the sidebar at Wikipedia, they admit one of the big unsolved problems of physics is why one of these fractions in the Quantum Hall problem is 5/2. That implies they know the mechanical source of the other fractions. They don't. They have no idea what is causing any of this. They have simply created some models that spit out most of the seen fractions, with a lot of nasty tinkering. But they could not possibly solve this problem for the reason I have already given: they don't understand the role of charge photons here, which are driving all electrons. And they don't understand that because they don't understand what charge is. They still don't have any idea the nucleus is channeling a real photon sea through a defined architecture, and that is because they have been instructed to pretend I don't exist. That despite the papers I have written on this subject being superviral for years. My 2010 paper on the Planck Relation and the Mass of the Photon has ranked on the front page of the major search engines for years. It was #2 behind only Wikipedia for years at Google, and even after Google censored most of my papers, it rose in 2022 to rank above Wikipedia on a general search on that topic at Yahoo and Bing:

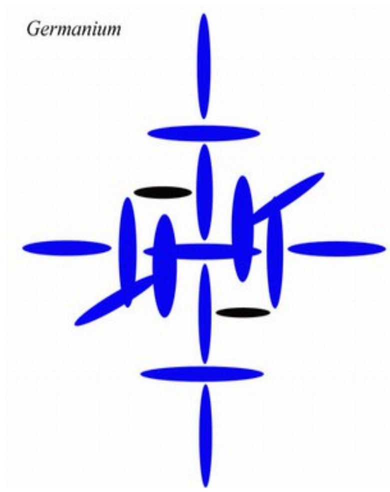


That's right: *after* Google—which fields 90% of searches—illegally took my results down, the paper continued to rise, beating the number 4 site in the US. With only 10% of my rightful audience, I still beat Wikipedia head-to-head. I haven't been tracking my 2015 paper on the Hall effect, but I would assume it sees similar numbers.

The reason those papers solve this immediately is that in the first I show that Planck's constant is hiding the mass of the photon. In the second I show that the Hall Effect is a result of the charge field, and that we have to monitor not one but two charge fields. If we do that we can solve this all mechanically, with no quasiparticles, no holes, no operators, and no fudging.

Another reason they can't possibly solve this is that they don't realize their fractions are dependent on the substance they are studying. That is why they were so surprised this year when they found a different topology when working with Arsenic. They had previously been working with Bismuth. Topology just means they are looking at the way the fractions vary across a surface, creating patterns. To explain the new patterns of Arsenic compared to Bismuth, they have had to "hybridize" or mix their previous models. But since all those models are based on pretty much nothing, this is all neither here nor there. We have to take their data and start over from scratch, using the real fields and particles that are there, instead of the computer models they pulled out of their shorts.

Just as they have to ignore the charge field—since they don't know how it works—they have to also ignore the nucleus. The Bismuth nucleus never entered their equations, and now the Arsenic nucleus doesn't either. How could it since they have no idea how it is built? To understand how the charge field recycled by the nucleus causes any topology, you have to start with the topology of the nucleus, right? You can't explain the genesis of air currents in a room with a fan without knowing the construction of the fan, can you? You can't just ignore the fan and the molecules in the room, trying to model the currents with fields of make-believe particles and manufactured interactions. But this is what they do in all quantum fields, from solid-state on down. They throw all the known particles in the garbage, since they can't model them, then create a bunch of pretend particles and fields they *can* model. In most Modern theories, you don't even need to know what elements are present, since it doesn't matter. The models don't express any known nuclear quantities, because so little is known of the nucleus those quantities can't be fit rationally into the math. But using my models we can begin to fit elemental numbers into equations. Feeding my nuclear models into computers should generate not just 2D topologies, but 3D. To do that, the computer also needs to know how the charge channels work, and what charge is. We now know that. Or I do.



That is from my long paper on Period Four. There I diagram many of those elements. Arsenic is like Germanium, but with a black disk on top instead of blue, and blue disks instead of black in the inner holes. That is why Arsenic is far more conductive than Germanium. Arsenic is not highly conductive, but Germanium is an insulator. Arsenic conducts better because it has a differential top to bottom, with two protons south and one north, so charge knows which way to travel. Germanium has charge moving both directions, so it is electrically flat. It is also flat because it has a very strong carousel level, pulling charge out equatorially. So its charge profile is square or orthogonal rather than being linear. It has very little through charge south-to-north. That also explains the relative weakness of Arsenic's conduction. Arsenic also mainly recycles charge pole-to-equator, with a weak electrical vector pole-to-pole. That will be important in this problem.

The first thing to do to solve this is to unwind their basic equation. The fractions come from the Hall resistance:

$R = h/e^2v$

Where h is Planck's constant and e is the fundamental charge. The variable v then takes on integer or simple fractional values, usually with an odd number in the denominator. As you see, it helps immensely to know that h is not just a mysterious constant, but is actually representing the real charge photon. In those previous papers, I calculate the mass of the charge photon to be about $h/2400$. Which reminds us that their equation is just a variant of $E = hv$, where v is the frequency. It also reminds us that e isn't really the fundamental charge. e is the charge of the electron, but the electron isn't, **or shouldn't be**, the fundamental particle of charge. The fundamental particle of charge should be the charge photon, which defines the charge field. So we could also write e as a function of the charge photon, removing the electron from this analysis altogether. As usual, we don't need it. As I have shown in dozens of papers, the electron is just a buoy in the field and doesn't *cause* anything. It is not fundamental and just gums up every equation. All these equations should be written in terms of the charge photon. In which case their fraction h/e^2 disappears as a constant. It is meaningless here, except as a raw number. You may have thought I was going to explain this as charge to electron density, using that fraction, but I'm not. All the action is in the variable v, which they sort of admit. It generates the fractions, and is tagged like a frequency, so it is all the more amazing they refuse to assign it to any real frequency. Not only do they not assign it to the charge field, they refuse to even tell you it is a frequency. You have to notice that yourself, at least at Wiki. Instead they tag it as a "divisor" and then as "filling factor of Landau levels". So the misdirection is palpable.

Here is another clue I am right, straight from Wiki:

The striking feature of the integer quantum Hall effect is the persistence of the quantization (i.e. the Hall plateau) as the electron density is varied. Since the electron density remains constant when the Fermi level is in a clean spectral gap, this situation corresponds to one where the Fermi level is an energy with a finite density of states, though these states are localized (see Anderson localization).[1]

Yes, it is a striking feature, but as usual they have missed the right explanation. Both Fermi levels and Anderson localization are manufactured falsehoods, as I have shown, so any explanation including them is bombast. They may as well try to solve this with more hopping on Cayley trees.

But as I just told you, we shouldn't expect this to be a function of electron densities for two reasons: 1) the fractions are caused by photon frequencies or densities, not electron densities, and since electrons are just buoys in that field, they wouldn't be expected to change it in most circumstances. They don't *cause* it, therefore the quantization is not a function of electron density in the first instance. Only if electron density became very high would we expect the quantization to change, and that can't happen here for reasons of which you are about to be reminded: 2) The experiments are taking place at low temperatures, where electron densities are naturally very low. To achieve low temperatures, the charge field is attenuated, meaning most charge is redirected out. The photon density itself is low. As it goes, it takes most free electrons with it. So to get electrons to affect quantization here, you would have to feed electrons in without raising the temperature. Since you would feed them in on a charge stream, that is pretty hard to do.

It's funny, because in that last quote you see them admitting this can't be caused by electron spacing. If it were, then electron densities would have to matter. That quote just *proves* this is caused by the invisible and ignored charge field—that is by real photons—but they do everything in their power to misdirect you away from that, shunting you immediately into this Fermi goop.

But they just won't give up on electrons, as you can see here:

The fractional quantum Hall effect is still considered an open research problem.[2] The fractional quantum Hall effect can be also understood as an integer quantum Hall effect, although not of electrons but of charge-flux composites known as composite fermions. [11] Other models to explain the Fractional Quantum Hall Effect also exists. [12] Currently it is considered an open research problem because no single, confirmed and agreed list of fractional quantum numbers exists, neither a single agreed model to explain all of them, although there are such claims in the scope of composite fermions and Non Abelian Chern-Simons Lagrangians.

Composite fermions? What are those?

A composite fermion is the topological bound state of an electron and an even number of quantized vortices, sometimes visually pictured as the bound state of an electron and, attached, an even number of magnetic flux quanta.

So a composite fermion is just another fudged electron. Have we seen evidence of these quantized vortices or magnetic flux quanta in any other experiments? No, they were made up specifically for this problem. The computer dreamed them up in one of its nightmares. I am continually amazed they put this garbage in print and try to sell. It is so ugly you know it is false on a first sniff. Same for "non-Abelian Chern-Simons Lagrangians", which I won't get into here, but just be advised. Anytime you see these operators you know you are being conned.

It is obvious to me on a first reading they are binding the electron and surrounding it with mythical vortices and flux quanta to hide the charge field and try to explain everything without it. Same reason Landau always refused to talk about the real photon, always replacing it with a quasiparticle or similar fake beast. But they need these vortices and flux quanta to manufacture degrees of freedom they just can't find in their real fields. As you will have noticed, even with all this manufactured complexity, they never manage to match the real complexity of my fields. They don't have anticharge, they don't have a nucleus recycling opposing streams in opposite directions, they don't have any real spins on real particles, and can't track them when they do. They don't even realize they have multiple EM fields in these problems, as I showed in my first paper on the Hall Effect. They don't realize they have incoming and outgoing fields, or ambient fields and intrinsic fields. They usually don't remember the nucleus is creating a field before they apply one. And they also forget the Earth has its own, which will interfere in some way with every experiment in every lab.

All we have to do to solve this is to apply v to the charge field density as emitted by the Arsenic nucleus (or to a frequency in 2D). You will say that if this is just a light frequency, where does the fraction come in? The fraction is the field of the nucleus interacting with the applied or ambient field. So it is basically a fraction of the inherent energy of the nucleus over the created temperature. You have incoming waves of energy that are dependent on the applied field and the temperature of that field, which will create a spacing of incoming charge. The Arsenic recycles that field, re-emitting it at the nuclear equator, orthogonal to the incoming field. The incoming and outgoing fields then create these patterns that they are calling topology. So to calculate the fractions, we need to know how dense the Arsenic is to start with, we need to know the temperature, and we need to know the architecture of the Arsenic nucleus.

And we need to know one other thing, which complicates this further. At very cold temperatures, all nuclei slow their spins, allowing more charge to pass pole-to-pole. This is what causes superconduction and the loss of magnetism. If that happens, the outgoing charge is no longer orthogonal to incoming charge, which completely changes all patterns and therefore all fractions. My guess is that this by itself would cause a sort of hybridized field, since at some middle temperatures you would have both pole-to-equator recycling of charge, and pole-to-pole.

Given that, I obviously can't spit out all the known fractions for you, despite having a model of Arsenic. But I can suggest where the denominator of two is coming from when they find it. As we have seen, most of these fractions won't be based on two, because the incoming and outgoing charge fields don't vary by a half. But we have just seen one major variance that may. That is the fraction of charge moving pole-to-pole, due to the cold temperature. At some temperature the amount of charge moving pole-to-pole will equal the charge moving pole-to-equator, giving us a ½ for one of our constituent fractions.

And there is another place this 2 could come into the fractions. I have proved the ambient field here on the Earth is 2/3rds charge and 1/3rd anticharge. To say it another way, we have twice as many photons as antiphotons. The nucleus is recycling both, one south-to-north and the other north-to-south. In most experiments you won't see that, because energy will be fed in from a specific direction and the nuclei will align their poles to that. If the nuclei can't align to the incoming field, due to being in a solid, for instance, the experimenters will adjust their fields. The nuclei won't turn, the experiment will, to achieve the best results. In that case, all monitoring will be of the main field, the secondary field being ignored. But if you happened to send in energy from the equatorial plane of the nucleus, neither pole would be favored and you would have a split field—split 2 to 1. Giving you that fraction again.