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Solid Light?

No, just another bad interpretation of the Charge Field

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Abstract: I will analyze the recent PDF from Princeton and their mainstream report of strongly interacting photons. In doing so, I will show that quantum dimer theory, Cooper pairs, BCS theory, and RVB theory are all non-physical and fudged. I will replace them with a simple mechanical theory based on charge recycling by the nucleus, where all particles, fields, and attributes are real, and where all mathematical variables are assigned to these real particles. This will falsify polaritons and all other quasi or virtual particles, as well as all pseudo-spins and other pseudo-attributes. I will provide diagrams that show directly the cause of the Meissner Effect, and its link to superconduction. Finally, I will explain high-temperature superconduction with the same visuals, showing how it is created mechanically by charge channeling.

On September 8, 2014, researchers at Princeton [Raftery, et al] reported in *PR-X* that they had created a form of solid light. I was sent a link to this free PDF at the American Physical Society Journals on September 17, so it acted as a nice birthday present for me. It gives me a new paper to analyze. Usually they charge you to read these things, but this time I have immediate access to the full report, which is nice. I see it as a birthday present since I know even before studying it that it is evidence for my charge field, rather than evidence for quantum entanglement, tunneling, Cooper pairs, and all the other absurdities of current physics. Anyone can see their interpretation makes no sense from the gloss and abstract, so all I have to do is show the better interpretation.

To start with, they are boldly contradicting mainstream theory here, but refusing to go back and admit they were wrong up until 2014. Part of the announcement in the mainstream admits that photons are strongly interacting in this experiment, but if they are then all parts of QED have to be rewritten. They neglect to tell you that. For instance, according to the current definition of Hadronization, photons do not interact. Go to the Lund University website, pioneers in Hadronization theory. There they will tell you the theory of Hadronization demands that photons do not interact. They can't interact without blowing decades of gauge math. I pointed this out just last year in my paper on Hadronization, where I showed a much simpler theory of Hadron composition using photons. Given this new data from Princeton, do they plan to go back and rewrite Hadronization theory? Of course not. They never do. Hadronization is not Princeton's pet theory—it is Lund University's—and these modern theories have no point of contact. They just assume no one is keeping score. The requirement for basic consistency was thrown out decades ago. So they report this new data, it disproves decades of entrenched theory,

but everyone agrees not to notice that. They just entrench the new data into the old theory with a few pushes and go on as before.

Reading the first few sentences of the paper tells us the authors are, as usual, in a deep state of induced trauma now called physics. Although they have been forced to wander far from logic and reason by their teachers, they have to appear to be doing science nonetheless, so they substitute a complex and weighty lingo for basic sensibility and coherence. Here is the first sentence of the PDF:

An understanding of the physics of systems far from equilibrium [1] encompasses deep issues of fundamental importance such as dissipation, decoherence, emergence of classicality from intrinsically quantum systems [2], symmetry breaking and bifurcations, and how equilibrium is itself established [3-6].

Six footnotes for the first sentence! They seem to understand that nothing they are telling you is sensible, so they have to give you six references to back it up. They are saying, "We know this sounds like gobbledygook, but respected people in the field have written books on it, so just take it on faith." The biggest thing you have to take on faith from the beginning is that "emergence of classicality from intrinsically quantum systems." I could write a book on that alone, and—in a way—I have. From your first day as a physics student at the graduate level, you have it beaten into your head that reality is intrinsically a "quantum phenomenon," which means that it is one not explainable by old-style physics or mechanics. That is, it doesn't obey any rules of logic, consistency, or reason. Quantum mechanics is really just a hugely fudged answer, skirting all the old rules of both math and theory, but you are expected to overlook that. The sensible world we know and love then "emerges" out of that cesspool in a miracle they call decoherence, but you aren't supposed to look closely at that miracle, either. You are just expected to count footnotes from respected authors, and swallow it without so much as a glass of water. So any paper that begins this way should throw up a huge red flag. Just from the form alone, you should know you aren't in the presence of real physics here.

Since we are dealing with the theory and math of condensed-state or solid-state physics here, we should know we are in one of the dirtiest and stinkiest cesspools of contemporary physics. In previous papers, I have said that solid-state physics should be renamed fudge-state physics. Decades ago, these guys were forced to ditch any and all real particles and to go completely virtual. They couldn't explain anything that was going on in a sensible way, so they quit trying. If you want proof of that, take that last link and consult my analysis of the Drude-Sommerfeld model, which model supplies much of the groundwork for the authors of this paper on light. To interpret their new data, they have to fit it to existing models, of course; but since these models are virtual rather than mechanical, the new interpretation has exactly the physical content of the old models: none.

Before they even tell you what they have done, they analyze it for you in terms of their non-physical models. They have to do this to prep your mind, and to try to determine your response. For instance, this is the start of paragraph three:

In this experiment, we explore a localization transition in a dissipative photonic system realized in the circuit QED architecture a solid-state realization of cavity QED. As a system supporting phase-coherent photonic states and controlled nonlinearity (tunable in situ on nanosecond time scales) reaching well into the strong-coupling regime even at the single-photon level, it opens up the possibility of experimental condensed matter physics with strongly correlated photons. The flexibility in engineering model Hamiltonians and environmental couplings makes it an exemplary candidate for carrying out certain classes of quantum simulations of important but difficult to study problems.

They assume they have a realization of a cavity QED before they have even indicated it. They assume strong coupling before they have indicated it. They assume tunneling before they have indicated it. They assume entanglement before they have indicated it. In short, although they have data never before interpreted by physics, they assume the entire architecture of QED is correct. This despite the fact that this experiment, like most other new experiments, strongly indicates QED is not right about anything. Most of the incoming data of the past five decades has been proof *against* QED, as I have shown in hundreds of papers. And yet they have always just jammed new data into the old architecture, jerry-rigging the math and theory wherever needed; and they are doing the same thing here.

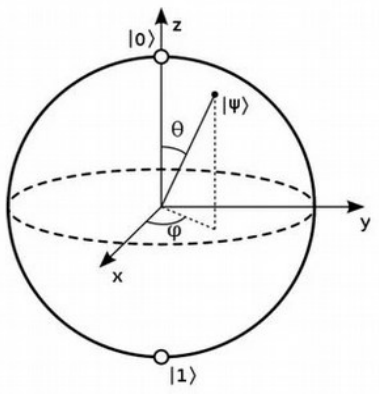
We see that again in the next sentence:

The dynamics of polaritons in driven dissipative Jaynes-Cummings chains have been studied theoretically, where a transition from classical to nonclassical steady-state fields, with varying interaction, tunneling and drive strengths, observable in the density-density correlation functions, have been suggested.

That means they intend to force fit their new data into this "theoretical suggestion." Most likely, the experiment was done to bolster this theoretical suggestion. As with all new physics, the experiments are composed to force a certain outcome, and all data is pushed wildly in that direction from the first moment. Every experiment is promoted with abandon (this experiment made *Huffington Post* within a few days of publication) as proof of the various standard models, although all these experiments are much easier to read as disproof of the various standard models. The amount of verbal and theoretical gymnastics required to read the new experiments as support for mainstream physics is astonishing, and should be an embarrassment to any real physicist. Somehow this embarrassment never registers with anyone involved.

Also notice the phrase "the dynamics of polaritons." There is no such thing. *By definition*, "dynamics" has to do with forces and their effects on motion. Again by definition, "motion" has to do with the movement of real bodies. Polaritons are not real bodies. Polaritons are quasi-particles. Quasi-particles are not particles, hence the name. They are hole fillers. Fudges. You only need quasi-particles when you cannot solve physical problems with real physics.

In paragraph four, we begin to get the "serious" pre-modeling, including the math. We are told we have "the physics of a single qubit coupled to a superconducting microwave resonator," but already we are being misdirected. A qubit is not a physical particle, like an electron or photon. It is a term that came from quantum computing, and it represents a unit of information.



That is the Bloch sphere representation of a qubit. The quantum qubit is expressed as a superposition of probabilities, which is what makes it "quantum mechanical." But already we have a slew of problems. Obviously, a qubit isn't a single bit of information, since to represent this qubit we have to specify at least two separate quantities or qualities. To start with, we have to know both the vertical and horizontal spin states. To have superposition, you have to have two separate qualities. So the qubit can't be a *unit*. The word "unit" means "one." But it gets worse, since, as you can see, this qubit also has a sort of extension. That is strange because we are told all qualities or quantities are virtual at this level. The photon is the real particle existing at this level, and we are told that even it has no real extension. No mass, no radius, and no real spin. As with the larger electron, the attributes of the photon are intrinsic only.

So I hope you can see what they have done here. They won't draw you a picture of the photon, because they don't want you asking about its *real* radius or spin or mass. So instead they draw you a picture of a qubit, looking like a real sphere with real radius and so on. But you have already been taught the qubit is just a theoretical entity, so hopefully you won't ask any physical questions about it. Hopefully you will just shut up and calculate.

This allows them to do the math without the inconvenience of having to assign the variables to real particles or real parameters, like length or time. As we have seen, the basic equations are written in terms of the qubits, not the photons. I will be told that is just a mathematical convenience, but it isn't. It is precisely this that allows for the primary fudges. It allows for the primary fudges, because *there is no physics* of a single qubit coupled to a microwave resonator. Physically, you cannot couple a theoretical particle to a real microwave resonator. The resonator is real. The qubit is not. Logically, the resonator must be interacting—therefore coupling—with electrons or photons or other real particles. But because they couldn't fit the math to that real interaction, they went virtual, where they can do anything they wish. That is the definition of a fudge.

Of course, that also applies to the "photon-qubit interaction." A photon cannot interact with a qubit, because one is a real particle and the other is an information-abstraction. Physics is supposed to be the interaction of one particle with another, not the interaction of a particle with an idea. To propose physical interaction, they must first propose that the qubit is real. They have not done that. They have not done that, because if they did they would be expected to point to data indicating the reality of the qubit. There is none. We have lots of data indicating the independent existence of the electron and photon, but no data indicating the independent existence of the qubit. We cannot create qubits and fire them at materials, as we do in the photoelectric effect. The qubit has no mass or mass equivalence, and does not appear in the table of real particles. There would be no way to even build an experiment to determine its radius or speed or inertia or mass, because its entire theoretical "existence" is only as a fudge.

If you don't believe me, watch what they do next. In the Jaynes-Cummings Hamiltonian, they assign variables $\hat{a}$ to the "photon annihilation and creation operators." What? Do they have any indication from any experiments that real photons are actually being annihilated and created? No. They have simply chosen to interpret data that way. By assuming annihilation and creation, they can most easily fit the data to old models. The same goes for the variables σ which they assign to the Pauli pseudospin operators. Again, that assignment isn't physical, since pseudospin isn't physical by definition. If it were physical, they wouldn't have to call it "pseudo." An operator is a mathematical entity, not a physical entity, again by definition. It is just a floating number that isn't attached to anything real. By refusing to attach it to anything real, these guys are once again able to dodge mechanics. By dodging

mechanics, they are able to dodge any possible physical disproof or counter-indication of their theories and math. If your math and theory involves pseudo particles with pseudo attributes in pseudo fields, how can any real outcome act as disproof of it?

There is no possible *direct* disproof of these theories, since they can always be finessed after the fact to fit new data. You cannot disprove an operator, you can only manipulate an operator. But the theories and math *can* be counter-indicated and thereby disproved by offering up a vastly simpler theory and math that explain the data in a mechanical and sensible way, with no fudging. That is what I have done before and will do again here below. Next, we are told,

Multiple Jaynes-Cummings sites can be coupled to form a lattice with various symmetries and topologies. Here, we study the smallest nontrivial chain, coupling a pair of identical Jaynes-Cummings sites through a photon hopping term (with rate J, and subscript s ¼ L=R specifying the left and right sites) to form a dimer.

Who thinks that resembles physics? Nothing physical is being studied there, or even proposed. All we have here is math pasted over an outcome, with no least attempt at creating a physical field of real objects. A Jaynes-Cummings site? Is that anything like an atom or molecule, or collection of them? A photon hopping term? You have to be kidding me!

I kept skipping down to later paragraphs, waiting for the authors to tell me what they were really doing without the pre-interpretation. They never do. From reading this announcement, you have no idea what really happened. All I can extract from this announcement is that photons were moving from one cavity to another. To find any legible interpretation of the actual experiment, I had to finally return to the HuffPost article, which told us this:

For generations, physics students have been taught that photons—the subatomic particles that make up light—don't interact with each other. But the researchers were able to make photons interact very strongly. To make that happen, the researchers assembled a structure of 100 billion atoms of superconducting material to create a sort of "artificial atom." Then they placed the structure near a superconducting wire containing photons, which—as a result of the strange rules of quantum entanglement—caused the photons to take on some of the characteristics of the artificial atom.

They don't tell us why the superconducting material is acting like an artificial atom, so all we really have here is the material. But neither the mainstream gloss nor the actual paper bother to tell us what material they were using. Incredible! The current models are so divorced from reality, they don't even have to bother telling you what elements or molecules were involved, what energy levels were involved, how the energy was introduced into the experiment (magnetic, electric, or other), or what the actual data consisted of. We know they weren't counting exiting qubits, or qubit energy levels, so what were they monitoring? Exiting photons, I guess. But if the photons were exiting, they couldn't have been either solid or stationary, could they?

I encourage you to go the PDF and type in "superconducting" in the "find in page" box. The only mention of it is in the abstract, where it says that the Jaynes-Cummings dimer is realized on a superconducting circuit platform. The fact that both the material and the wire are superconducting isn't addressed once in the body of the paper, and we have to go to *HuffPost* to discover it. Apparently, all the math and theory would work the same if *nothing* was superconducting. This is because we are never told why the superconductivity matters mechanically. They can't tell you that, **because they don't know**. They don't even know what superconductivity *is*. Yes, they know the effects and how to create it, but they don't have any idea what is going on in the material. That is why they can disregard

the material completely. That is why they *have to* disregard the material completely, and replace the actual material with qubits, polaritons, and dimers. They can't use the real charge field or the nucleus to explain any of this, so they have to ignore the charge field and the nucleus and replace them with quasi-particles, pseudo-spins, operators and Hamiltonians.

"We have used this blending together of the photons and the atom to artificially devise strong interactions among the photons," Darius Sadri, a postdoctoral researcher said in the statement. "These interactions then lead to completely new collective behavior for light—akin to the phases of matter, like liquids and crystals, studied in condensed matter physics."

Nice to know these guys recognize atoms were involved here. Go search the PDF for the word "atom," the word "nucleus," or the word "nuclei." Only one passing mention of the atom in sentence three, but only as an example. From reading the rest of the paper, we would have no idea atoms were involved in the current experiment.

We see why that is from Sadri's quote, where he says the experiment is an indication of "blending of photons and the atom." Blending? Blending how? "The photons take on some of the characteristics of the artificial atom." What characteristics? How are the characteristics shared or transferred? Is the blend permanent, or do the photons revert to their own parameters outside the artificial atom?

For me to begin to make sense of any of this, I need an element to start with, so that I can introduce charge in a defined manner. Since these guys are using quantum dimer theory, I will assume they are using high temperature superconductors that use Copper as the main conductor. Dimer theory was introduced through RVB [resonating valence bond] theory, proposed by Anderson and Baskaran back in the late 1980's to fill in big holes in charge theory. What I mean by that is that they had no mechanical way to explain superconductivity, since they had no way to represent charge streams through real material. I have shown that the nucleus is channeling real photons through its interior in defined streams, and that this channeling is what we call charge. But since the mainstream has never realized that, they could only explain superconductivity by pasting complex new maths over the field. That is what this RVB theory and dimer math is. In short, superconductivity is created by valence-bonded electrons forming Cooper pairs, and these Cooper pairs greatly increase the conductivity of the substance.

Unfortunately, this mechanism, even in its current wildly fudged form, requires very low temperatures. Since Cooper pairs are said to be broken up at energies on the order of .001eV, only low temperature superconductivity can be fudged this way. The discovery of high-temperature superconductivity should have destroyed BCS [Bardeen, Cooper, Schrieffer] theory, but since these guys had already stored, insured, or mortgaged their Nobel Prizes, that was considered unfeasible. The theory continues to be taught, although it was garbage to begin with, and has since been destroyed by experiment (like the rest of contemporary physics).

I say it was garbage to begin with, because to allow these electrons to pair up requires a massive fudge of the original charge field definitions. Electrons are supposed to repel, remember? Well, to get around that requirement, we are told,

The electron is repelled from other electrons due to their negative charge, but it also attracts the positive ions that make up the rigid lattice of the metal. This attraction distorts the ion lattice, moving the ions slightly toward the electron, increasing the positive charge density of the lattice in the vicinity. This positive charge can attract other electrons. At long distances this attraction between electrons due to the displaced ions can overcome the

electrons' repulsion due to their negative charge, and cause them to pair up. The rigorous quantum mechanical explanation shows that the effect is due to electron–phonon interactions.

I encourage you to read that several times. The magic trick occurs between sentences three and four. A positive charge from the lattice to "other electrons" all of the sudden becomes an "attraction between electrons." The writer pulled it right out of his hat. Before sentence four, there is no attraction between electrons, and nothing is mentioned that would create it. But in sentence four you are simply *told* an attraction between electrons has been created. No explanation at all, just an assertion. That isn't physics, it is just hypnosis. And if you think the quantum mechanical explanation is more rigorous, you aren't paying attention. Notice it includes an electron-*phonon* interaction. There is no such beast as a phonon. It is another fudge. It was dreamed up to fill a hole, like the polariton and the qubit and the quasi-particle and the virtual particle. As with all other electron bonding theory, the Cooper pair was invented by simply ignoring and inverting the standing definitions of the charge field, and selling that as a new piece of physics. It was the hamhanded placement of an attraction in the field where a repulsion should have existed. It would be like placing you in front of the Sun and telling you it was dark.

Amazingly, Wikipedia, the mouthpiece of the mainstream, admits that BCS theory cannot explain high-temperature superconductivity. It says that other effects may be in play, and that these effects may even explain low-temperature superconductivity as well. We know that must be true, because even if electrons could pair up, given mainstream theory the pairing wouldn't explain superconductivity. Again, they just *tell* you it would, but never bother to explain *how* paired electrons increase conductivity. They would have to tell you what the electrons were conducting, and how pairs conducted better, wouldn't they? I think they forgot to do that.

Remember, according to current theory, the Cooper pairs are created from electrons already in the vicinity. The electrons in each pair don't even have to be adjacent. In the Cooper pair, they simply condense into the same ground quantum state. But again, without further theory, that explains nothing. We are told,

In the full BCS Theory, one finds that the pairing opens a gap in the continuous spectrum of allowed energy states of the electrons, meaning that all excitations of the system must possess some minimum amount of energy. This gap to excitations leads to superconductivity, since small excitations such as scattering of electrons are forbidden.

How would that lead to superconductivity, exactly? Say I admit that the scattering of electrons is forbidden. That just keeps the original number of electrons stable, but it wouldn't by itself lead to a huge change in conductivity. To hugely increase conductivity, you first have to tell us what is being conducted, and how the electrons are conducting it. Has mainstream theory ever done that? No. They have never even told you what charge is, or what conduction is, so how can they show you a *mechanics* of its increase? To make this BCS or Cooper pair theory work, they would have to tell you that paired electrons had more charge or conducted more charge than unpaired electrons, right? But according to current theory, electrons have a defined amount of charge. Aligning them or pairing them would not change their charge. So how, exactly, does pairing electrons or condensing them into the same ground state increase the conduction of charge? Isn't the ground state the *lowest* energy state? And wouldn't greater conduction imply a *greater* transfer of energy? It seems like excited electrons would transfer more charge energy, since they *have* more energy. The theory would seem to be upside down to all logic.

I will be told that less energetic electrons allow more charge to pass through, increasing conductivity.

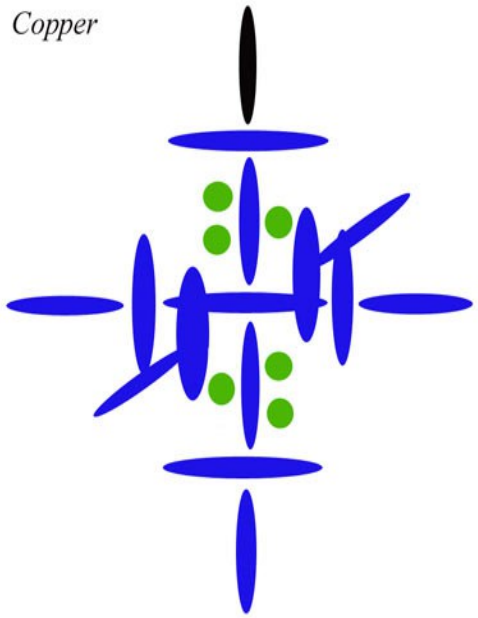
The electrons simply don't get in the way. But in that case, the best superconductor would be a vacuum.

The truth is, nothing about superconduction can be understood until you understand that all charge is the recycling of real photons by electrons, protons, and nuclei. Conduction is the alignment of this charge channeling in greater streams, usually by aligning nuclear poles. Superconduction is then the most efficient alignment of these streams, often at very low temperatures but sometimes at higher temperatures. Superconduction is just conduction peaks caused by elemental structures, and with some structures the peak doesn't have to be near absolute zero.

For instance, we now know some doped Copper Oxide ceramics give us a peak at around 130K. RVB theory has been re-fudged with spin fluctuations to try to explain this, but doesn't. Since RVB theory never used the real objects in the materials, the theory was always just a castle in the air, even before this latest round of fudges. To explain how a material superconducts, you cannot throw the material out and replace it with hypothetical pseudo-particles and fields. In RVB theory, the explanation can only apply to the hypothetical particles and fields that the math is assigned to. By all the rules of math, logic, and language, you cannot explain x by replacing x with y and explaining y. If you do, your explanation only applies to y.

So if we wish to explain superconductivity sensibly, we have to stick to the particles we know are there: the photons, electrons, and nuclei. That was impossible to do without knowing exactly what charge was, and how it was being created and transferred; since the mainstream hasn't known that, they couldn't solve these problems sensibly. But since I now know that, explaining superconductivity is no longer that difficult. We simply have to follow the charge streams through the nuclear structures. Even with my general theory of charge channeling, explaining superconductivity would be nearly impossible without diagrams of the nuclei involved, but I have also deduced those, so we should make quick progress. I have previously provided my readers with diagrams of Copper, Oxygen, Calcium, Barium, and Mercury, so we should be able to build an entire ceramic molecule, diagramming the charge channels through the full structure. Once we have understood high-temperature superconduction, we will be in a position to read the new data from Princeton in a completely different way, without needing any quasi-particles, dimers, qubits, or other mathematical tricks.

We will start with the Copper nucleus, since that is the key here.



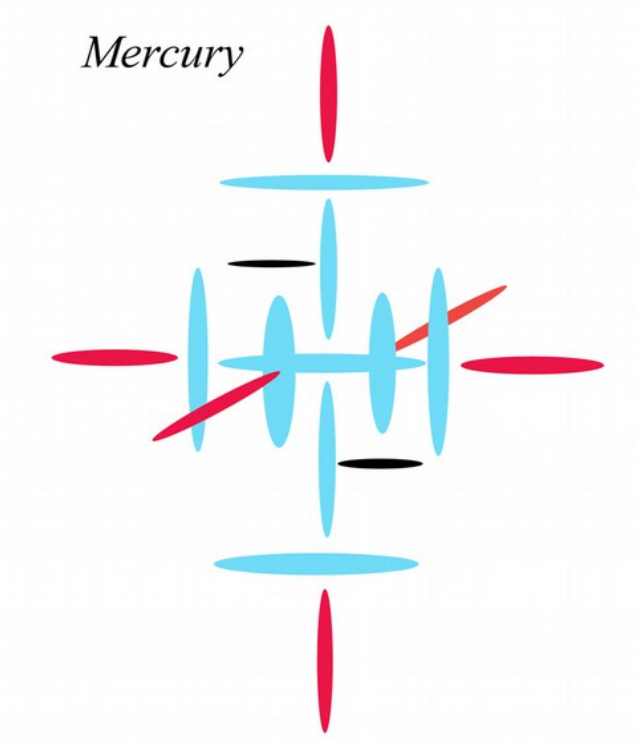
In what follows, it will help if you have already read my paper on Period 4, where I diagram many of the transition metals, showing how the charge streams are created. That is where this diagram of Copper came from. In superconductivity, we will be following the polar or axial channel (from bottom to top) in the above diagram. This is what I call the *through charge* stream, because it concerns charge that passes straight through from south to north without being channeled out the carousel level. The carousel level is composed of the disks on the equator, which spin as a whole east/west in a circle (like a carousel). Normally, they pull charge from the poles to the equator, where the bulk of it is re-emitted. It is the spin of the nucleus which causes this main stream, with the greater angular momentum at the equator causing the greater charge emission there. In most cases and with most elements, the main or primary charge stream is from pole to equator.

But when we are looking at what we call electrical conduction, we are looking at the stream from south pole to north. This stream is linear, directionalized, and coherent. If we align the poles of adjacent nuclei, we create longer lines of conduction.

As you can probably see already, this explains the Meissner Effect in superconductivity, where interior magnetic lines disappear. We have never been given a simple mechanical explanation for that, but my diagram of Copper supplies it immediately. If this Copper nucleus begins superconducting, that simply means that all photons being recycled are going from pole to pole. None are being recycled out the equatorial or carousel level. As we know, the magnetic field lines are always orthogonal to the electrical field lines. Well, the electrical fields lines go with the conduction. They run south to north here. The magnetic field lines are then orthogonal to that and in a circle, by the old right hand rule. Well, since we have no photons being emitted out the equator in this case, we have no magnetic field being created. Both the electrical field and magnetic field are caused by the charge field, and the charge field is just the recycled photons. Photons that are recycled from south to north in a line create the electrical field, and photons that are recycled through the carousel level create the magnetic field. So if all charge is channeled south to north as through charge, nothing is left to create the magnetic field. It disappears. This disappearance is what we call the Meissner Effect.

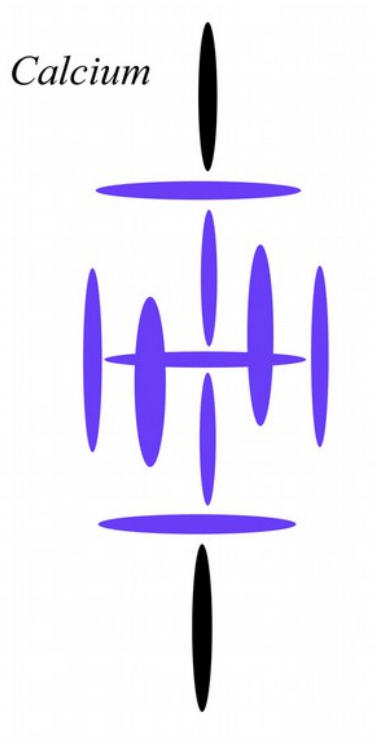
This tells us how the magnetic field and electrical field are related at the foundational level. Given my theory, we should have *expected* the magnetic field to go to zero when the electrical field was at a maximum, since the field creation is a zero-sum game. Since the same charge field creates both, a maximal electrical conduction implies a zero magnetic field. If all charge photons are being conducted, none can be left to create the magnetic field (internally). Since all photons are spinning, the external electrical field will still have a potential magnetic component, but in the atoms themselves, there is nothing that we would call a magnetic field. Given superconduction, those internal field lines are gone.

Now, if we plug an Oxygen into that Copper nucleus, we can increase conduction even more, since the Oxygen will plug in on the pole (see diagram below). Our recycling engine will be bigger, having more fans to pull charge through (as it were). And the added fans will all be aligned on the pole, increasing through charge. Under normal circumstances, CuO will still recycle some of the charge out the carousel level, so we will not have superconduction. This begs the question: how can we cause superconduction? What would we do to maximize conduction? Well, obviously we would minimize charge recycling on the equator. That would force all recycling to happen on the pole. The easiest way to do that is stop the carousel level from spinning. If the nucleus stops spinning about its axis, we no longer have more angular momentum on the equator, and no reason for charge to recycle out that way. This is what happens with supercold superconduction. But what happens with warmer superconduction? To figure that out, we have to look at how it is created in the lab. We need to add Mercury, Calcium and Barium to our diagram.



That is Mercury. See my paper on how to build Mercury for more on its structure. Mercury is used here because of its strength. It has four protons top and bottom pulling charge through. Normally, Mercury is only a fair conductor because it has the same number of protons top and bottom. For this reason, charge doesn't really know whether to go south to north or north to south. Only because the charge field on the Earth is unbalanced to start with (we have more photons here than antiphotons—see

my paper on beta decay for more) does Mercury conduct at all. On Venus, Mercury is a terrible conductor, because Venus is more balanced. [This is also what causes the loss of magnetism on Venus.] But Mercury is great for doping Copper in superconductivity experiments because of its raw strength. If charge can be told which way to go, Mercury has a lot of potential push, you see. It has a lot of charge fans lined up, ready to act as a strong engine. This is where Calcium and Barium come in. Both are group 2 elements, and in my diagrams we see that these elements are very polar or linear. Their fourth level protons are all on the pole. None are in the carousel level.



See how we have no disks plugged into the carousel level, pointing out? Calcium has only two outer level protons, and they are both plugged in the poles. So both Calcium and Barium are being used here to tell Mercury to recycle charge on the pole instead of out the carousel. The fans of both Calcium and Barium pull the charge of Mercury through on his pole instead of letting him recycle out his equator. Given that, we don't even have to stop Mercury's carousel level with supercold. Once Calcium and Barium linearize Mercury's charge stream, Mercury stops spinning. With no photons moving through his carousel level, Mercury cannot maintain his carousel spin.

From this, we see there are (at least) two ways to stop the carousel spin: 1) supercold, 2) *forcing* all charge to go from pole to pole. But to force charge from pole to pole, we have to create a new structure. We can only do that by forcing alignment of the right elements, as with Mercury and Calcium. [See full diagram of the ceramic below.]

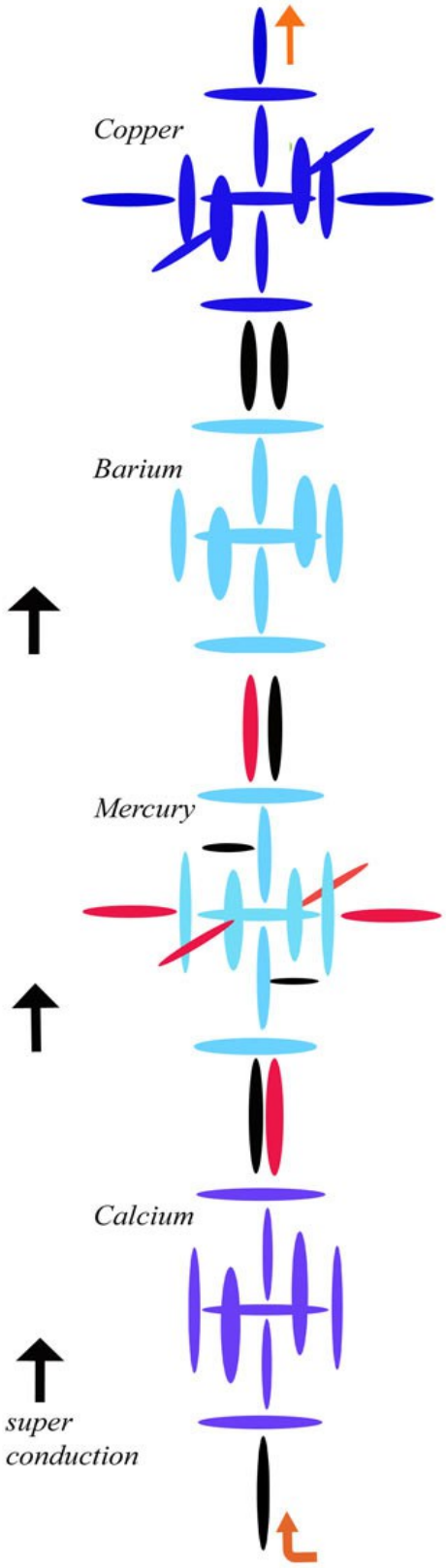
The way we create the superconducting ceramic is more evidence of this, since doping isn't enough. You can't just mix Mercury and some Group 2 elements, automatically creating a dopant that will align with CuO. As when making a Neodymium magnet [see my paper on Period 4 again], you have to force the nuclei into the right lines, and you do that by applying strong external fields. The CuO tends to do that on its own, given any ambient field, since it will naturally align those things around it. But since Mercury is much larger than CuO, the CuO can't move it into place without a pretty strong

existing field. Since supercold implies a low-density charge field to start with, the ambient field is weak. You actually need the extra heat (temperature) to get all the dopants to line up right. Once they do, the combination will force any charge stream to move south to north in a line. This will dry up all the internal carousel level recycling, which will stop the carousel spins, which will provide what we call the Meissner Effect, even at 130K.

I hope you can see that this will change everything regarding how we interpret the new data from Princeton. The absurdly convoluted maths pasted on top of the superconductivity problem over the past five decades have taken on a life of their own, leading to ever more ridiculous theories and proposals. But once we simplify the problem back down to the real particles and fields present, all the current theory evaporates. We then just apply my charge field theory to the data directly, explaining all outcomes as results of charge channeling by the nuclei.

The only problem we have left is that the guys at Princeton haven't even given us enough information to do that. The only thing I could find in the offered PDF was pages of theory based on dimers and pseudo-particles. I don't have the foggiest clue what the actual experiment was about. The authors have been careful to bury any real content under a slag heap of math and lingo. And the mainstream reports are no better. All we can glean from them is that some people in New Jersey are moving photons through superconducting materials, and standing around flummoxed. To hide their utter confusion, they have compiled as many references to Nobel Prize winners as they could list on short notice, and hunkered down under a tent of opaque math. If someone wants to send me some results written in something that resembles the English language, I will be glad to decode it for them.

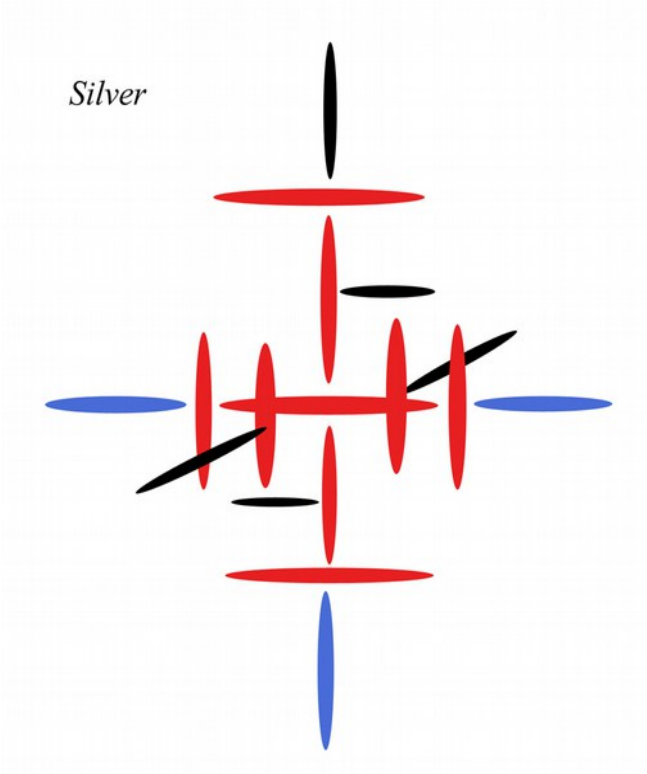
[*see more below*]



By studying the full diagram, we can see how Barium and Calcium have to fit into the line [I have

simplified just a tad by leaving the Oxygen out of it]. Having a Group 2 element on both sides of Mercury forces him to channel linearly. You may not understand why that is, even given the diagram, so notice that Barium must be above and Calcium below. Barium is larger and channels more total charge. Therefore, Barium "pulls" more than Calcium pushes, in a way.* This prevents charge from being channeled into the carousel level of Mercury. The potential from Barium is greater than the ambient field potential to the sides, so the charge stream has no reason to go to the carousel level. Therefore, the dopants must align this way. No other sequence will create the right field potentials.

My new diagrams also tell us why Copper works better here than Silver, despite Silver's superior conduction.



The main difference between Silver and Copper is in the core, which I have diagrammed red with Silver but blue with Copper. Since the red disks have twice as many protons as the blue disks (4 rather than 2), Silver's core is twice as big as Copper's. This means that, given the same ambient field, Silver will have much more mass in the carousel level than Copper. I direct you to those four vertical disks in the carousel level. Silver has 16 total protons there while Copper only has 8. Therefore, Silver is more difficult to stop spinning. Mercury is much larger than Copper but only marginally larger than Silver. Therefore, it much easier for Mercury doped with Barium and Calcium to stop Copper from spinning than to stop Silver from spinning. And so Copper is a better candidate for superconduction.

But why does the CuO ceramic superconduct at around 130K, but not at higher or lower temperatures? We can answer that, too. As I have already shown you, the five elements have to be lined up to superconduct, with each element in the right place. And since Copper is the only strong conductor in that line, he is the one that will have to pull the others in line in the beginning. Remember, Mercury can only be put in line by the existing charge streams, and Mercury is larger than Copper. Therefore, we need some amount of charge strength to start with in the ambient field in order to line these elements up. At supercold temperatures, there simply isn't enough charge density (heat) in the ambient

field to create a stream. Without the charge stream, Mercury can't be pulled into line. Near absolute zero, all the elements begin to drift, and the coherence is shot. But if we add enough heat to take our ceramic to 130K, say, we have enough charge density for Copper to work with. His conduction then pulls the other elements in line, allowing for superconduction to kick in. But if we keep adding heat, at some point we will have more charge density than Copper can conduct. The extra charge will disperse around the elements, and charge collisions will cause nuclear spin from the outside. This is obviously counterproductive, because we want our nuclei to stop spinning once superconduction has started. So we want enough heat to maintain alignment, but not so much that we create nuclear spin from the non-conducted ambient field. We need just enough charge density so that Copper can conduct it, *but not more* than Copper can conduct in the given line. This explains why superconduction happens at only one temperature, or one small spread of temperatures.

In closing, I will answer one final question. Above I have said that the Meissner Effect is caused by loss of the equatorial channel, and thereby the magnetic field. But if we lose the nuclear spin, we should lose all conduction, shouldn't we? Since the spin is what caused charge to move through in the first place, loss of spin should cause not only a loss of the magnetic field, but the electrical field as well. Loss of spin should cause total loss of field potentials around the nucleus, which would negate through charge just as much as equatorial charge. If the electrical field is lost, how can we have superconduction?

Well, in a sense, we don't. Superconduction turns out to be a bit of a misnomer. Without nuclear spin, the nucleus is no longer conducting at all, rigorously. It is only continuing to provide a path, given by the nuclear structure, but the nuclear vortices are gone. The nucleus is no longer *driving* charge through, it is now only allowing charge through. The driving force of the conduction must be supplied by the incoming current itself. Remember, a superconductor is providing no resistance to a given charge stream or ion stream. But we have to supply the current from outside. A superconductor can't create its own current from an unstructured external field, as a normal conductor can. A superconductor can only provide a zero-resistant path for a pre-existing structured field.

In this line, we also have to remember that although supercold can nullify the overall nuclear spin, it won't nullify the spins on all the protons in the nucleus. If we apply the external current to our superconducting material, properly aligned, that current alone will spin the protons it contacts on the nuclear poles. Think of the fan again. A moving fan will pull in wind from behind, but the reverse is also true. If you apply wind from behind a *non*-moving fan, the wind will start the fan turning. So although the carousel levels aren't spinning in a superconductor, the protons on the poles are. We could then call this conduction, if we like, since the spinning protons then conduct the charge through. Strictly, we would have to say the incoming charge (current) is the cause of the spin, rather than the spin being the cause of the charge channeling, but you see what I mean.

Using my discoveries in this paper, I have updated and corrected my previous papers on superconduction and superfluids.

*As usual, there are no real pulls in my physics, but the field densities here create potentials that give us the *appearance* of pulls. Again, it helps to think of the protons as fans that blow photons in certain directions. Just as fans seem to pull wind as well as push it, so do the spinning protons and alphas.