

A most elegant philosophy about the Theory Of Everything

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Abstract:

Given a simple set of assumptions, this paper gives an elegant explanation how ElectroMagnetism, the Strong nuclear force, the Weak nuclear force, Gravity, Inertia, matter and Time all could “emerge” from a single “fundamental” force.

Introduction:

For many years scientists have been working on finding a single theory explaining all observed phenomena: The so-called Theory Of Everything.

One of the results of this work is an 11 dimension string theory. This theory is said to be very promising in finding a single underlying theory that explains everything but it does not (yet) at the moment.

What we know about things like evolution and the universe is that often things are based on an algorithm of randomly generating virtually endless combinations of basic building blocks. For example like atoms evolving ultimately into intelligent life like our own. It would seem logical to assume that on the lowest level reality is also based on such an algorithm. I therefore simply do not believe that reality so complicated that we would need 11 dimensions to explain it.

Intuitively I have felt for a long time there is a problem with most of the current theories. For example and in particular the relativity of simultaneity concept of the relativity theory. I consider this to be evidence that the theory is not more than a mathematical model. As a mathematical model I feel it is safe to say it is correct, that much is clear. That has been proven enough in experiments. But I believe this does not mean that this model is also description of reality itself. And in order to come up with a Theory of Everything I believe we need to understand, or think, about what reality is first before making a (mathematical) model for it.

After thinking about this for a long time I concluded that the first problem for me was the definition of time as a fundamental concept. I found out later that others have argued also that time is not fundamental, so this idea on its own is not new or unique.

There may yet be a thing called fundamental time but that is a concept that is per definition not measurable and therefore an irrelevant concept for all intents and purposes.

I can understand that it makes sense mathematically to define time as a fundamental concept and/or a fourth dimension for example. And within a certain context I accept the validity of those theories as

a mathematical model. Again, those theories have been proven enough in experiments. However, if in reality, time is not fundamental, then that might very well cause the problems we now see when trying to unify the various theories in to a single Theory of Everything?

Anyway, when I started to see time as non-fundamental, many things eventually started to make a lot more sense and I was able to come up with the following most elegant philosophy about the Theory Of Everything.

To summarize the introduction: in this paper I am assuming time is not fundamental and the universe has not more than 3 dimensions.

The 4 “fundamental” forces:

At the moment there is a general consensus that there are 4 fundamental forces that are to be explained or unified in a Theory Of Everything: ElectroMagnetism, the Strong Force, the Weak Force and Gravity.

The Strong and Weak forces seem to be theoretical and a bit artificial to me. They are required in the standard model of particle physics and everybody seems to agree on that. In any case, these forces did not seem to be good candidates for me to start looking at first.

ElectroMagnetism seems to be the best “known” force, but at the same time there still seems to be a lot unknown about this force.

I am assuming in this paper that ElectroMagnetism is essentially a chain of electric and magnetic effects where one effect causes the other. So, any given electric effect (ee) causes a magnetic effect (me), causing an electric effect (-ee) causing a magnetic effect (-me) causing an electric effect (ee), etc.

And then there is Gravity. This is an incomprehensible phenomenon at this stage.

Gravity does have many similarities with Inertia though and I believe I have found a very elegant possible explanation for what could cause Inertia and from that the rest followed almost naturally.

Inertia:

Let’s assume that a body of mass in an otherwise completely empty (aetherless) universe exhibits Inertia.

So, if we apply a force to it, the body of mass accelerates and if we stop applying a force the acceleration stops and the body of mass stays at a constant velocity.

How can we explain this Inertia? What is “resisting” the applied force to a body of mass in an otherwise completely empty universe where nothing is holding the body of mass in place?

Since we assume the universe is empty, this resistance (Inertia) must be some property of matter itself. A result or consequence of the stuff matter is made of. But then what is this stuff?

We already know Matter is energy and ElectroMagnetism is energy.

Could it be then that Matter and ElectroMagnetism are one and the same thing?!

Could it be this obvious? Could it be that the “stuff”, the basic building block, matter is made of is nothing but some kind of localized, externally EM neutral, electromagnetic phenomenon?

After thinking about this it started to make a lot of sense. Let’s assume that the basic underlying principle of ElectroMagnetism is as described earlier: ee, me, -ee, -me, ee, etc and then think about what would happen if we let the time between the EM effects approach zero. In that case any effect could be cancelled out externally by an anti-effect. In other words, if the anti-effect arrives “soon” enough no EM effect is able to propagate outward as-is and it seems logical that a localized, more or less stable, externally EM neutral, vortex of EM effects could be the result.

If matter is indeed some kind of EM phenomenon this must be at frequencies higher than the highest observed frequency of gamma radiation because matter does not radiate. But still it is an EM phenomenon. If this is the case I would expect to see particles created from high frequency/energy gamma radiation. And sure enough this turns out to be the case.

If matter is such an EM phenomenon then this is not ElectroMagnetism as we know it at the moment. It is something else. But what is it then?

Could it be a different state of ElectroMagnetism? I believe so!

Jumping to conclusions I can see the following states of ElectroMagnetism:

- “Plasma” state: EM near field
- “Gaseous” state: currently known EM spectrum
- “Liquid” state: matter
- “Solid” state: black hole?

I postulate now that matter or particles are nothing but: more or less stable, externally EM neutral, ElectroMagnetic vortices of a very high frequency which I will call:

MagnetoElectric (ME) vortices.

Please note that MagnetoElectric and ElectroMagnetic are identical concepts in principal. It is just a matter of where you start counting. For the purpose of this paper I just needed a different term for ElectroMagnetic.

Now Inertia becomes easy to understand. All we need to assume for that is that the electric and magnetic effects in the ME vortices each have their own “location” and in order to accelerate such a vortex, any given ME effect caused by another ME effect needs to be “forced” to a location other than were it naturally would occur. And also we must assume that once this has been done the ME vortex is permanently changed in such a way that this movement is retained in all following ME effects until another force is applied.

The problem now “only” is: how to model such ME vortex configurations? How big are the chains or loops of ME effects? Is it a loop of 4 effects, or loops of 8, 12 or more? Maybe these loops can exist in

any multiples of 4 and multiple loops (counter “rotating”?) can exist simultaneously in a single ME vortex?

Maybe it is possible to simulate this with a computer? This may require however (much?) more insight in what exactly ElectroMagnetism is. At the same time I expect that any attempt to model these vortexes will help in providing more insight in understanding ElectroMagnetism. I expect that with simulation “configurations” of all observed particles could be determined and properties of particles explained. Properties like stability, (chemical) reactivity and radioactivity for example. Also I would expect that new particles can be predicted.

Another thing that becomes obvious immediately is that such a ME vortex will have a maximum speed because there is a maximum distance between any two following internal EM effects. Forcing such a ME vortex “near” this maximum speed will create some kind of exponential increase in Inertia. This is probably some kind of warping of the vortex that cannot “stretch” or “squeeze” further at some point. This warping may also cause frequency changes in the rate of EM effects in the ME vortex (i.e. time dilation) and length contraction?

Also: explaining the Wave-Particle duality concept suddenly seems to become much easier. I haven’t given this much thought yet and would gladly leave that to the experts.

Strong and weak nuclear forces:

If matter is a ME Vortex then it becomes obvious to me that the strong or weak nuclear forces simply are no longer required.

To explain this: If matter or particles are ME vortices there will be many different energy levels and configurations of these ME vortices. In other words, there will be many different particles at certain energy levels that are more or less stable. Given enough force or energy such ME vortices/particles can be split or merged with another such ME vortices/particles or EM radiation resulting in one or more other ME vortices/particles and/or EM radiation (i.e. energy).

For example: If we take the ME vortex called Helium nucleus. It is said to be containing 2 protons and 2 neutrons because it can be split up in 2 protons and 2 neutrons.

It does not seem logical to me at all to assume that a Helium nucleus ME vortex is made up of 2 protons and 2 neutrons where the protons need to be kept together with some force. The fact that a Helium nucleus can be split in 2 protons and 2 neutrons only means to me that the energy level of a helium nucleus is (roughly?) the same as the combined energy level of 2 protons and 2 neutrons.

In other words: I see no reason to assume that the ME vortex configuration called proton is present as-is “inside” a ME vortex configuration called Helium nucleus.

Instead it makes a lot more sense to me if I consider the Helium nucleus to be a single ME vortex of a certain (overall) configuration with a total energy level equal to that of 2 protons and 2 neutrons and certain (overall) properties like for example a charge of +2. At the same time it would not surprise me however if the Helium ME vortex would be made up of four sub vortex configurations where each sub configuration would have many similarities with either the proton or neutron ME vortex. But in

essence the Helium vortex must be viewed as a single vortex (configuration) and not four different ones that need to be held together with duct tape.

A similar effect probably does not occur (or to a much lesser extent?) between the Electrons and nuclei. There seems to be enough proof that electrons exist (almost) as-is “inside” atoms and molecules.

As an everyday life analogy to ME vortices we can use drops of a liquid with a certain surface tension. Depending on the surface tension these drops can bounce against each other without merging. If they bounce fast enough they merge and if they bounce too fast they break up again in different size drops after that.

I would expect that there is no actual particle surface but a particle surface zone with increasing “tension”. In order to split or merge ME vortices a certain energy threshold needs to be exceeded to break the surface tension. Depending on the configuration and energy levels of the resulting ME vortices there can be (large amounts of) energy released or absorbed if the energy levels of those resulting ME vortices is (much) different than the original ME vortices.

To conclude this section: I postdict that in particle colliders an enormous amount of different particles will be found.

Gravity:

The only remaining “fundamental” force still to be explained now is Gravity.

If we assume that matter is a ME vortex then it seems logical to assume the only thing that could affect it must be some kind of EM field.

If Gravity is some kind of EM field then at least the elegance criterion would be met and ElectroMagnetism would be identified as the single Force from which all other forces emerge.

What we know, or seems safe to assume, about Gravity:

- The effect of Gravity is the same as the effect of Inertia during acceleration
- A Gravity field is like accelerating space.
- Gravity does not radiate energy.
- Gravity influences other ME vortices at such a fundamental level that they accelerate.
- Gravity works both ways between two particles: Each particle has a gravity field influencing the other particle.

But then what kind of EM field could this Gravity field be?

Given the assumption that matter is a ME vortex and that the time between the EM effects of the ME vortex is not completely zero then it seems logical to assume there may be some not (yet?) detectable EM field that does propagate outward after all?

An interesting question about gravity that may be testable is: does Gravity effect particles directly or is Gravity a result of a kind of entanglement of the Gravity fields themselves?

Let's assume there are two particles created simultaneously at a distance of x light seconds and their gravity fields emanate outwards at the speed of light.

If gravity affects those particles directly then gravity starts working after x seconds going from 0 to max in an instant.

If gravity does not affect those particles directly it would take $x/2$ seconds when the gravity fields "meet" in the middle for gravity to start taking effect. Gradually/Linearly increasing (in quanta?) from 0 to max from $x/2$ seconds to x seconds?

Further thought and experiments are needed here. For example: Is the Gravity field itself part of the particle that emanates it? In other words: is the gravity field itself matter and if so does the gravity field itself have (or cause) mass and/or Inertia?

I have been stuck at this point for several years now and unable to come up with a more satisfactory explanation or description of gravity. I feel that I am very close and have hoped to "solve" this before publishing this paper. But it seems that is one bridge too far at the moment.

Time:

Assuming time is not fundamental then what is time?

I believe time as we have defined it at the moment is perceived time. I believe this perceived time is a function of the frequency of the EM effects in ME vortices. If the frequency of these EM effects rises then any matter interactions (radiation, fission, fusion, chemistry, etc.) are quicker and time is perceived to go faster and vice versa.

If this is the case then the observed time dilation effects in experiments are caused by a frequency decrease of the internal EM effects of ME vortices. Such a frequency decrease could very well be the result of ME vortex warping due to acceleration and/or gravity fields.

There seems to be consensus or evidence that high speed also causes time dilation. But speed is relative, how can that cause time dilation if there is no static reference frame where the speed is relative to? The only reference frame I can think of is: a gravity field. If that is the case then only high speed relative to a gravity field should cause time dilation. The higher the gravity field strength, the higher the time dilation effect at any given speed and the lower the gravity field strength the lower the time dilation effect?

This then raises another question like: what if indeed there is less time dilation in a low gravity field and time dilation is as I assume in this paper caused by ME vortex warping? Could it be that this means that, if the speed of light limit is also caused by ME vortex warping, the speed of light depends on gravity field strength?

This would be a nice, and possibly even testable, prediction to come out of this paper.

Conclusion:

I believe I have given a very elegant explanation how Inertia, the Strong force, the Weak force, Gravity, matter and Time all could “emerge” from ElectroMagnetism.

Making ElectroMagnetism the only “fundamental” force.

All this is based on a simple set of assumptions that I have listed below which seem very reasonable to me. The pieces of the puzzle seem to fit so beautiful with these assumptions that I cannot imagine how this cannot have at least some merit.

If there is merit to this paper and in fact ElectroMagnetism and matter are one and the same thing then it seems like an explanation for things like dark matter has been staring (shining) us in the face all along ...

But that, and my ideas about a more fundamental underlying force for ElectroMagnetism, will be in a second paper I plan on writing.

Assumptions made:

Time is not fundamental.

The Universe has not more than 3 dimensions.

ElectroMagnetism is essentially a chain of electric and magnetic effects where one effect causes the other. Any given electric effect (ee) causes a magnetic effect (me), causing an electric effect (-ee) causing a magnetic effect (-me) causing an electric effect (ee) etc.

Inertia is a property of matter alone. So not dependent of anything else like Aether or such concepts.

Gravity is an EM field.

Abbreviations:

ee: Electric effect

EM: ElectroMagnetism or ElectroMagnetic

ME: MagnetoElectrism or MagnetoElectric

me: Magnetic effect