

How the universe works - Differently

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Abstract

While entitled 'differently' is a big order, it is not so much refutation but alternative views essentially 'decoded' from the multiple disciplines of general science. These four concise assertions can find correlation with both the fine and large scale structure of the universe:

Time as only Now,

Mass as the confinement of Energy,

Defining a base energy form – Optical Gre theory,

Interpreting an electromagnetic Space fabric.

In concert these ideas are interpreted in three parts:

Why Mass & Energy are different or are they?

Justifying an Electromagnetic Space fabric

Originality in decoding Complexity.

Why Mass & Energy are different or are they?

As suggested 'How the Universe works – differently', as a title is a big order and skepticism is justified. But as a philosophic introduction into that notion, the difference interpreted here is in emphasis, two significant ways. The first is a judgment of Math vs. Reality, a battle Einstein himself fought for years with 'statistics' and lost. The other is the dichotomy between Wave & Particle, which is inherently illogical and 'doesn't compute'. How can we deal with both these considerations and properly allocate justifiable emphasis where it might most help comprehension and lead to new insight? So while not throwing the Physics baby out with the bathwater, it is still a big order.

I suggest four very different notions, the first two are logical observations, and the later two are consequent reasonable interpretations. But are very much interrelated that create an alternative view – not rejection of any particular discipline yet require temperance of ideas for certain Standard model constructs in both physics & astrophysics. These are: Time as only Now and as such is a 'dependent' variable of local space and contained substance. More specifically, Now, a physical 'stress' hence Time's vector, notably without duration, while its consequence is active and accumulated 'strains' which is the illusion of flowing time. Therefore, Now is a singular manifold over all space and not a dimension but rather the only location of physical change, its only expression. This is the most obvious revelation if you rationally think about it and why Time can only be Now¹.

Mass as the confinement of Energy – Is essentially presented as a grand generalization at all scales. Not just fundamental particle constituents more quantitatively incremented but an infinite array and continuum of other naturally named units of mass with an inclination for additive sums of energy above rest mass.

Defining a base energy form – Optical Gre flux theory, smaller in scale to strings (equally unknown), but ubiquitous particles with self-induced optical properties. While I assert the universe abounds with this dynamic flux, and hypothesized, anything that slows these particle velocities exhibits properties of mass. In aggregate, their instantaneous scalar density count and/or their local gradient, slows and curls this flux, hence a self-induced refractive index (RI), variably distributed in direction and magnitudes over the vast extent

¹ To think all of space and time exists with all the blood and guts of both the past and the future is absurd, rather than just their visual image, again only now (from the past) and unknowable actuality of the future yet to occur.

and duration of the universe, notably associated with accumulating mass concentrations. Interpreting an electromagnetic Space fabric with new subtle clues, suggesting a more specific three-fold definition: A compatible space for the perpetual Gre flux; A shear medium for electromagnetic transverse waves; And a source of partial charge to create the base spin feature for the electron, other quark mass elements and their persistence.

The time issue is straight forward but what is the real difference between mass & energy? Pure free energy, whatever it is, travels at the velocity of light (V_{oc}). While Rest mass, whatever it is, the exact opposite of motion, creates the base level of their exchange ratio. So in $E=mc^2$, it is meaningful that it is the V_{oc} squared that identifies the conversion of mass to an equivalent amount of energy. Then once mass is established, the same potential change in energy, identified as kinetic energy, is associated similarly with the square of the velocity of the mass, as in $E=mv^2$. But this same ratio of exchange applies internally and demonstrates how mass can harbor, store or confine even more energy where now the Total mass = Rest mass + Rest mass times $fn(\text{temperature, chemistry, velocity, spin, phase, etc.})$ in all forms of named mass objects². In fact, other than photons (free energy), energy does not exist unless associated with mass.

Just like the math terms, Integrate or Differentiate, we can say Mass & Energy are Equal but separate or Equivalent but different or literally, One in the same. So this should establish who is doing what to whom. Namely, what is the house and what are the bricks. Speaking of that matter, would we recognize one of these bricks if we ever saw one³.

So how does mass confine energy? First it must snatch partial charge from the Space fabric in which spin and standing wave patterns are captured (from a photon pair collision) and specifically quantized in named fundamental particles. From there, Quantum mechanics and ever larger aggregations by the rules of physics and chemistry disciplines, define all these additional energy storage mechanisms including electromagnetics. All together this establishes the foundation for all forms of free energy and confinement of that energy within all manifestations of mass and its dynamics.

Why shouldn't there be equivalence in the effects of motion in inertia and gravitational acceleration, with a resistance to change velocity at all rates including the unattainable for a unit of mass to equal the pure energy state at the V_{oc} or packing an ever greater wallop as if it were? Think v^2 approaching c^2 ! Is this the ultimate conflict between spin and linear energy travel? Notions of other particles to yield this effect, Higgs for one and gravitons for the other, seem silly and redundant, rather than mass & energy being themselves.

Along these lines, one exciting field is the new complexity determinations of three kinds of neutrinos with detection of relative ratios giving clues to the creative process of their sources. Rather of interest here, is the question of their possible trivial mass, kind of a cross between their having a velocity a little less than the V_{oc} , yet with no charge but a distinct electromagnetic spin direction eg. mass or antimass neutrinos.

Other questions along the mass/energy dichotomy is the not so subtle difference in captured energy in the quark/antiquark combinations, and if there is a clue as to the dominance of one over the other in our local space. Hence, not necessarily a grand extinction at $1/H_0$. Equally at this point, a little more dissertation (update) on photon to

² Here is where I like to consider a 'flying bird' as any typically 'named' mass object. In contrast to a point mass, where does the integral of its nature begin or end?

³ In this scheme, I would vaguely wonder if there could be a Millikan 'oil drop' experiment to identify the micro granularity of Gre flux particles.

quark to proton/neutron process in a hypothetical ‘first three minutes’ would be useful. One idea really radical here: we are happy with, not ten or even four, but only three dimensions. That would really sharpen Ockham’s razor.

Justifying an Electromagnetic Space fabric

Whether the subject is Quantum mechanics or Astrophysics and whether an object is millions of solar masses or 10^{-30} grams, particle conceptions which dominate the interpretations include a set of established forces which have a tendency to be mathematically ad hoc⁴ toward how or what they attract or repel. With everything a particle, what seems vague is the nature of Space. I have no quarrel with the standard disciplines but have two reservations in judgment: Reality vs. Math⁵ and Wave vs. Particle, placing the former’s my heuristic preference.

My three assertions on Time as only Now, Mass as the confinement of Energy and the particulate Gre flux with Optical behavior (Eberz, 2009) covers a development over a number of years but this Em-Space fabric (Electromagnetic-Space fabric) derives from a more recent inspiration from Eric Lerner (1992), who satisfied the call for ‘What cosmology really needs is a good electrical engineer’. While he himself may not cotton to this assertion, between he and Gell-Mann contributing the partial charge of quarks, I have decoded the essence of the Electromagnetic Space fabric and its relationship to my ubiquitous Gre flux Optical theory. While neutral moving mass exhibits Maxwellian behavior in a micro scale in the Em Space fabric, moving charge equally creates electromagnetic fields at any scale and magnitude throughout the universe.

So while there are variations of thought imagining an endless variety of particles: leptons, fermions, anti-particle sets etc. associated with a Space foam, I assert the Em-Space fabric association with an energy base of an Optical Gre particle flux, that these two elements can explain all manifestations we observe and interpret in myriad ways, and can be so derived similarly. Granted a few toes herein might be stepped on, some a different reality view vs. a math approach and possibly elimination of some particulate concepts such as gravitons, wimps, Higgs, strings etc. But this is principally an equal alternative view.

Electromagnetic transverse waves require a shear medium for propagation and partial charge spins in quantum particles are predominantly measured in the micro scale, the essence of Maxwell’s interchange of div & curl of charged particles with associated magnetic fields, also command the macro domain of the cosmos. This is very much related to a variable Voc (Velocity of light) associated with the Em Space fabric’s permittivity & permeability. And I assert that the Gre flux density, analogous to the gravitational field, also has that correlated association with the Em Space fabric. With that all else falls in place.

In my mind the creation and annihilation of mass is a profound expression of free energy – Photon/wave packets as transverse waves at the Voc and Mass as the confinement of that free energy – essentially one state to the other. Annihilation of mass particles and conversely their creation captures the essence of the relationship of mass and energy with respect to the Em Space fabric. The Gre flux is free energy if it travels at the Voc, such as photons (waves in a bigger sea) while stable mass, ‘rest mass’, is capture, retarded, arrested free energy about a partial charge complex with the charge derived from the Em Space

⁴ While ‘ad hoc’ may be too bold a term, there is a degree of that in anything we might conceive.

⁵ My favorite Karl Popper quote: The abstract (math) is an infinite domain from which we pick and choose and apply to the universe with various degrees of verisimilitude.

fabric. Both the creation of mass such as an electron/positron pair, and annihilation, completely cancelling the mass/anti-mass charge complex and its contained energy is again released as linear free energy. So it is either free energy at the Voc or charged based captured spin energy in rest mass. With the Gre flux optical behavior, the Em Space fabric accomplishes both these observable phenomena.

But it is not a pure motion, no motion switch. Beyond fundamental particles, there is incremental mass added in kinetic, chemical, thermal etc. in all mass objects. In fact, there is no boundary between the captured energy flux of named mass units and their gravitational field. Greater agglomeration of mass units, increase the base gravitational field and its gradient. Therefore, if interpreted as mass which slows down free energy, the gravitational field can exhibit a ponderability itself⁶, by slowing down the velocity and duration of the Gre flux thru any mass complex, another level of energy capture (temporal). To me, a classic example is the Dark matter in major galactic clusters, like Abell 1689.

Also little appreciated is the potential intensity and magnitude of magnetic lines, essentially a feature of the Em Space fabric alone. The non-particulate aspect of magnetic field lines both in dimension and character begs for new interpretation. Further, in sun spot flares, recently observed at the surface of the sun, so not deep in the high temperature core, is conformation of a nuclear CNO sequence catalyzing hydrogen to helium fusion. And to me an open issue: does raw charge have mass or require some quantity of energy to create it out of the Em Space fabric? Is there some way to tease such an energy magnitude out of the 'rest mass' equation? It does seem to show up in the different quark 1/3, 2/3 partial charge mass interpretations

One thing that strikes me as amusing is the issue raised in 1887 by Michelson & Morley, that there needs to be a shear medium for light to propagate – but at the same time, assuming such a thing – how could something like the earth possibly plow thru it? Recognizing the reality of this styled Em Space fabric, answers the question! It's the only way charged based mass particles including their agglomeration in the earth, possibly could. Now today, space is no longer assumed void, but filled with all kinds of conceptual features including assertions that it does have an absolute non-relative velocity with the earth, sun and galaxy, about 240km/sec (N&N, 2007). This to me also suggests an absolute space feature in the nature of the Em Space fabric concept.

Originality in decoding Complexity

As a lone voice in the wilderness maybe I should try to speak more clearly. While I seem to be repeating the same ideas over in different ways to reinforce my concepts, herein are three distinct assertions. A statement that these four: Time as only Now, Mass as the confinement of Energy, Optical Gre flux theory and the Electromagnetic Space fabric, are unique with me. Secondly, these ideas are essentially 'decoded' from across the science disciplines. And in that respect these are alternative views as straight forward as the most classic example of light being both a wave or a particle, or the opinion as to whether one idea is more realistic or more mathematical and in this later case, the classic example of Einstein's opinion of statistics in Quantum mechanics as an inadequate explanation of reality. And thirdly, why I claim these four concepts as original and derived by me.

Foremost, Time as only Now, has been my foundation theme. In the general literature as a topic, it has been treated '6 ways from Sunday' over the millennia. Just Google 'Time'. It defies classification. But what's more extant in modern physics is the 4D of space-time,

⁶ The fact that clock rates vary in different environments, as established by outside observers, exposes the sterility of the Relativistic view that the Voc is a constant. It is not.

lack of time's arrow, no preference for forward or backward⁷ and bizarre extensions into time travel. But getting into the essence of the discussion, in terms of claiming merely an alternative view, there are four key words: reality, math, particle and wave. The crux of the issue is:

Relativistic math is unchallenged in computational solutions to many declared exotic observations but can be challenged on interpretation of tensor metric space or only strict relative motion between objects/space travelers and the more glaring bizarre definition of Black holes⁸, eg. Is another interpretation more realistic on how the universe works? In another direction, Quantum physics dominates. The micro world, both in emphasis of literally everything being a particle, utilizing extreme mathematical concepts of matrices, symmetries or extra dimensions, with particle classifications of strange flavors, not a pun, but rather just non-descript handles. Yet with so much invested, can these interpretations be denied? No, but I milked other ideas out of them.

In terms of method, the approach is decoding into an alternative view or creating a term in a reframed context. For example, I did not invent the word 'Now' – I resurrected it from space-time where it was claimed to be irrelevant, superfluous, non-commensurate etc. But more specifically, it lacked acknowledgement of what change really is. And space-time, only images from the past or similarly in the future, changes or their images yet to occur, and more potent than anything, it is essentially our dynamic existence, again only in the present. Further, my notion of Mass as the confinement of Energy is unique from generalizing the concept for all scales of mass and using the notation 'all named mass units' with incremental addition of energy so many different ways, including the reverse trend by the significance of destruction of organizational levels as in atomic star to neutron star and introducing the idea of minimum base levels for mass organization⁹.

While I wouldn't consider it brilliant but decoding the essential aspects of the partial charge of quarks was a different interpretation as to what might be stable or fleeting and augmented with an electron as a $-1/3$, $-2/3$ charge spin pair. My interpretation of free energy always at the Voc in contrast to captured energy as in rest mass, is a distinct division. This was coupled with the unique role of the Em Space fabric as a shear mechanism for the transverse wave of light in the free energy case but also acknowledges the source for extracting partial charge as the basis of rest mass. Part of that interpretation is buried in the micro world but more intuitive, is emphasis of the magnet line without limit in the extended cosmos. The vast amount of energy harbored in a magnetic line in free space can be revealed in amazing galactic forces or in 'reconnection', when opposite field lines are forced to cancel as in sunspots or earth/sun cross fields in magnetic storms (Mozer, 2010) with awesome release of energy not directly associated with mass¹⁰.

My notion of a Gre particulate flux with a self-induced optical refractive behavior was simple but suggested that in a lean density could be interpreted as the gravitational field or concentrated in a slower curl state as in mass, was no more than comparing a car on the open road vs. one in a traffic jam. It's not the individual cars but their dynamic aggregation

⁷ Has any physicist been so foolish to declare time's arrow so arbitrary that if the human heart could pump backward, you might get younger as a consequence?

⁸ The black hole itself is first a mathematical contrivance (Relativity dies at the Event horizon), independent of observations of million-star-masses better-termed AGN, active galactic nuclei.

⁹ The concept of an infinite mass singularity in a Black hole is pure mathematical nonsense. Mass does not exist without 'spatial' organization. And the destruction product, free energy, has no mass.

¹⁰ A magnetic line is a different concept than a magnetic field, something that might get wrapped around an axel yet defies breaking.

that created the real difference between free energy and that confined in mass. That the velocity of the car is an analog to the velocity of light and that it slows in a higher gravity field merely falls out. This thought is some 40 years old for me but my recent suggestion is that the density of the Gre flux directly establishes Maxwell's permittivity & permeability of space, physical coefficients of susceptibility to electrical & magnetic fields, hence establishing the Voc of the Em Space fabric. Additionally, snatching partial charge from the Em Space fabric can be inferred as feasible from the dynamic photon pair collision to create a positronium. The nature of matter/antimatter, and the details of both particle creation and annihilation can also augment these ideas.

While having heard many times the term Space foam and its magic, I believe my declaration of rather an electromagnetic Space fabric, with its shear medium and partial charge function, is new and not found in the general literature. While I can claim no one in my camp, I can identify recent work of specific authors, many of whom are identified in the Alternative Cosmology Group (cosmology.info), that take a different tack from the conventional that could be contained in this larger paradigm. DT Froedge (2009) has derived particle mass ratios from Schrodinger standing wave modes, independent of the usual named force carriers. In part I associate my Em Space fabric with the creative work of Lerner (1992) and Mozer (2010) on large scale features of electromagnetic phenomena in open space.

Certainly the universe teems with diversity but when we contemplate its foundation, untold complexity seems strange. Herein, content with only 3 dimensions, an Electromagnetic Space fabric modified by the Gre flux density, yielding the appearance of free energy or slower moving versions of 'ponderable' mass, seems to satisfy that elegant minimum. Issues of origins or entropy trends in the large scale are still outside this immediate local view. However excursions into the nanoseconds of the Big bang for creating numerous exotic particles based on temperature only with no implied transition scenarios, as in photons to positronium, challenge the imagination.

Details of these notions and appropriate citing are expanded in Eberz (2009) or related essays 'Deeper look at the Night sky' and 'Critique of Black hole classifications' from the author at noelwendy@earthlink.net or visit my website www.cosmic-concerns.net. for more detail and a link to a YouTube pitch on 'Time as only Now'.

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H/He fusion on the Sun's surface?