Phi-Quantum Wave-Function Crystal Dynamics

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Abstract: In this development upon three previous papers [1][2][3], we shall explain how Phi-Quantum Wave-Function "crystal constructs" as "elementary particle analogues" could emerge from the proposed time-equation and associated wave-function, and how they then are proposed to associate and develop through a fractal (golden ratio) progression to a macro-world scale, as per a golden ratio sequence of atomic association via an Avogadro number spatial scaling compression process, such with an associated formulation of the background microwave radiation. The emphasis of this paper is to highlight the continued utility of the golden ratio time-equation, as a demonstration of its utility as a theoretic tool, despite its relatively limited theoretic development thus far, exposing the need for more crafting in papers ahead to better account for natural phenomena, including the elementary particle level.

Keywords: golden ratio; fractal; Fibonacci; Avogadro number; platonic solid; Avogadro, CMBR

1.   Introduction

We are at the point in this series of papers [1][2][3] where we can give a detailed criticism of Einstein's proposal for relativity theory [4]. In the first chapter we will examine the basic difference between the time-equation (golden ratio) and Einstein's proposal of relativity; we shall explain exactly how the dialogue presented here differs as per the employment of a new set of mathematical tools and algorithms, not as fixed spatial grids that transform mass objects to one another [5], yet a fixed time-algorithm that employs topographical 0-scalar space able to contract/bend according to relativistic demands on the phi-quantum wave-function scale.

As has been demonstrated [1]-[3], the proposed time-equation theoretic tool is able to link all the general equations of energy, charge, and mass from the one time-equation axiomatic base, all of such in "not" considering time to be the 4th dimensional entity of spacetime, yet a new axiomatic structure itself in regard to space. The

question remains though, namely "via this axiomatic change, how are all the elementary particle features, the nature of the elementary particles, as for instance the spin of particles, being addressed?"

First though, we shall undertake an analysis of Einstein's relativity. Then we shall move to a more thorough explanation of gravity on the atomic level discussing its emergent features from the atom in relation to a proposed crystalline structure of the phi-quantum wave-function, which then opens to the mechanics behind the emergence of gravity, not as a wave-function collapse, yet a wave-function "folding" resulting in "sub-quantum granularity" and thus presumably mass, ideally opening the door to an elementary particle world.

2.   A Review of Relativity

Einstein employed the idea of "time" to measure mass references in space, time as "what a clock measures", time that could be fluid and recalibrated with a fixed spatial reference given the different motions between different spatial mass references measured with momentum in the context of "c". Space along with mass primarily was the focus in his appraisal of relativity. Consider figure 1.

$$c + v$$

$$c + v = \frac{d}{t}$$

train

$$c$$

$$c + v$$

$$v$$

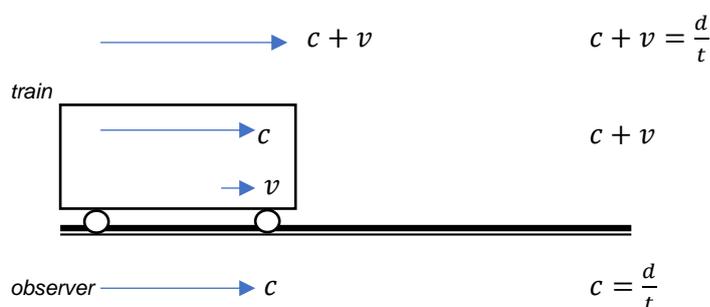*observer* $\quad\longrightarrow\quad c$

$$c = \frac{d}{t}$$

Figure 1: Einstein reasons the idea of light on a train and how time is elongated to preserve the constancy of the speed of light from any frame of reference, and here that of the observer. This is explained as "time-dilation"; the resultant "c" care of "time" must be slower on the train with the effect of light relative to the observer by making "t" *longer.*

Einstein's work depended on a few key findings, the main one being the bending of the light of a star hidden behind the sun to be viewed by the Earth during an eclipse [6]. Yet does gravity bend light, or is there a feature to a massive body that is essential to electromagnetism itself that results in an emergent effect of gravity *seeming* to bend light? Could there be a *self-repelling* effect on a more fundamental electromagnetic level such that light would seem to bend around massive bodies?

In this series of papers (in carrying the idea of using time as the "golden ratio") we are considering time to be fixed to the golden ratio (albeit in search of perfecting the trace of a circle), while space is the malleable/warp-capable feature; "space" is the feature that would need to undergo a type of "contraction" in regard to "time-points" of the time-equation, points on the particle level.

How can "0" space "contract"? Through using the reference of the time-equation in space it is proposed to *appear* to contract by the effect of time, and thus in regard to space, time-points. To explain this, we need to construct a mechanism for the contraction of space as much as Einstein developed a mechanism for the dilation of time.

What is proposed here is the constancy of golden ratio time-equation and associated time-points *warping* space.

3.   The "Phi Quantum Wave-Function" scale

In this series of papers, we have so far explained time as a golden ratio arrow time-equation, and how it would imprint on space, space as a three-dimensional bi-directional entity.

It is considered that the golden ratio time 3-d 0-scalar space *figures and equations* presented in paper 2 ([2]; p4-11, fig. 1-13, eq. 1-9) are sufficient to prepare the processes forwarded here by this theory.

In general review of those pages and associated figures, the feature to note is the scaling system for the atom based on the golden ratio algorithm for time in aiming to trace π. Another feature to note is how the electrical component of the electromagnetic wave is out of phase with the magnetic component, and that this differs to the contemporary belief of the electrical component being in-step (in-phase) with the magnetic component.

The phi-quantum wave-function scale is proposed to be the fundamental process of alignment for the subatomic particle structures, and above all how the extra atomic structure emerges ([2]; p16, fig. 16). Once again, the diagrams contained therein highlight just one axis of determination, in this case the "x" axis; this was considered logical as per being defined as a t_N event ([1]; p4, eq. 4), t_N =1. The other two axes will be proposed to represent the spin of the elementary particles, or rather how the electric and magnetic components could rotate "around" the x-axis.

Before we discuss the nature of particle spin though, the fundamental feature we need to acknowledge is the electromagnetic coupling context 32c for emergent gravity of the 22(21.8)-quantum length wave-function ([2]: p16, eq. 16) and how this would become the platform for spatial contraction ([2]; p12. eq. 9) (a relativistic requirement here, and not time-dilation). The following is the wave structure that results, a standing wave, as per figure 2.
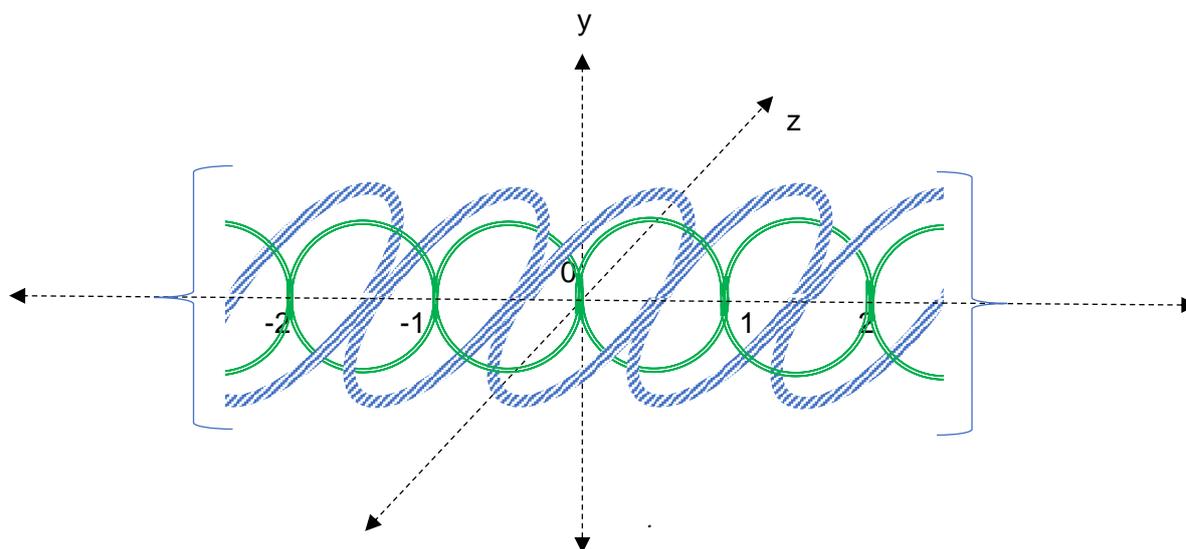

Figure 2: Green line electrical component (x-y), blue line magnetic component (x-z), both waves out of phase with each other and perpendicular to each other, folded-over/coupled. The values on the x-axis represent ½ quantum length increments.

Here with this "coupling (folding-over), we have a new type of wave structure for both the electrical and magnetic wave components. For the electrical component, we have perfect circle traces at the ends of each 22-

quantum length. The thinking here also is that given we have a perfect π trace, we are creating a precedent for the a "reaching" of π in a complete 3-d 0-scalar space context (time "circle"), and we have this at two points on each circle on the x-axis, each point representing a key "particle" manifestation, as per figures 3 and 4.
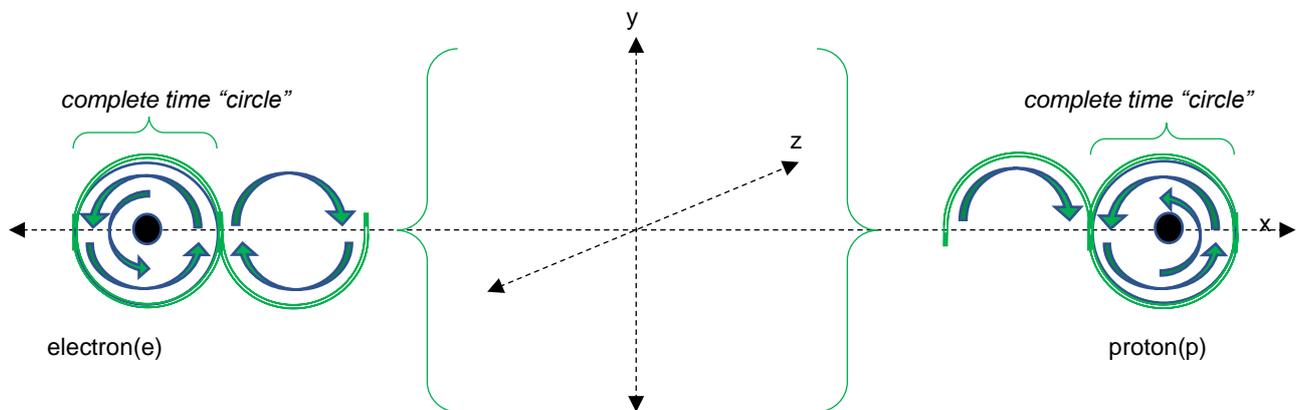

Figure 3: The thinking here with these points is that they are associated to a complete time-circle, a 3-d circular time-entity that would emerge as "mass": this would happen for the proton and electron; only the electrical component of the wave is shown here (proton (p) and electron (e)).
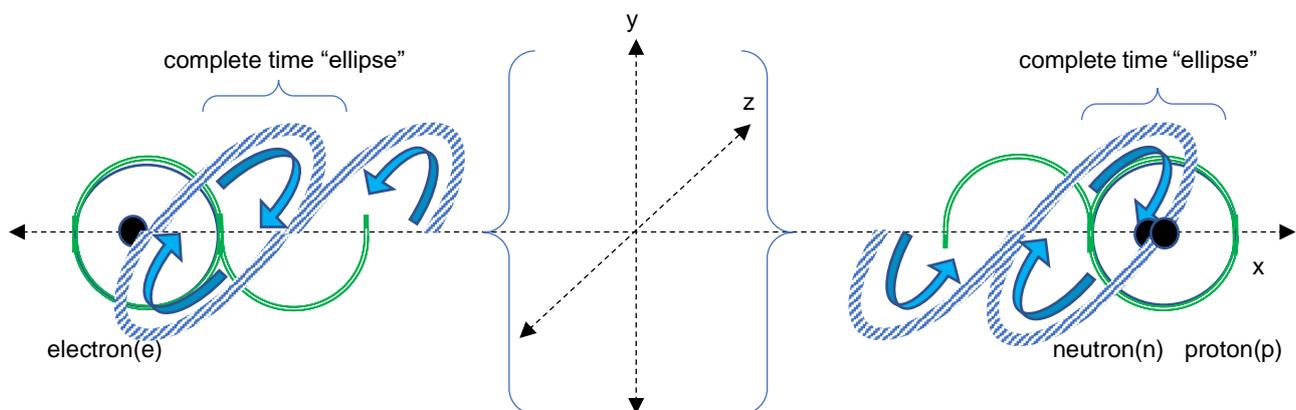

Figure 4: the thinking here with the neutron point as the "magnetic" component, is that the neutron is associated to a complete time "ellipse", a 3-d ellipsoid time-entity that would emerge as "mass". Note, the electrical component of the wave is also shown here in green, and that the manifestation of mass would still need to abide by the electrical quantum component of light/time (the fundamental axiom to be considered). The idea of an electron "partner" is not considered as shall be explained further on in the theory.

Regarding how the proton and neutron are proposed to spatially relate together, and how this would relate to their elementary "30" substructure (15 for the proton/neutron axis, 15 for the electron axis), there is still some preliminary theory to go through before we can discuss that elementary particle domain with greatest certainty, and thus detail reserved for a subsequent paper when those required theoretic tools become available.

For now, the equations pointing to the nature of these points at either end of the 22(21.8)-quantum length phi-quantum wave-function scale need clarifying.

On the proton/neutron scale (M_p) we must consider the emergent feature of mass and thus a squared value of "2 results per 3 dimensions" as a value of the emergent gravity context (universal) as M_C:

$$M_C = \left(\tfrac{2}{3}\right)^2 \cdot M_p \tag{1}$$

On the electron end of the scale (e_c) we would have an inverse negative value (golden ratio to the proton/neutron) yet not squared (as this is not an emergent gravity feature), as "3 dimensions per 2 results" yet the two results "factored as a quantum wavelength (lambda)" (given the electron is the effector of quantum determination) as a value of the electrodynamic (universal) context as Q_c :

$$Q_c = \tfrac{3}{2} \cdot \tfrac{1}{\lambda} \cdot e_c \tag{2}$$

These equations are relevant to the derived universal contexts for mass and charge respectively, which when each is multiplied by c^2 we arrive at G and k_e respecitevely. What of the dynamic between the particles on this new folded level with its 32c emergent gravity manifold?

Here we must be arbitrary; the idea forwarded is the electron being "dissociative" on this emergent mass/gravity level, and the proton-neutron being "associative", as per figure 5.
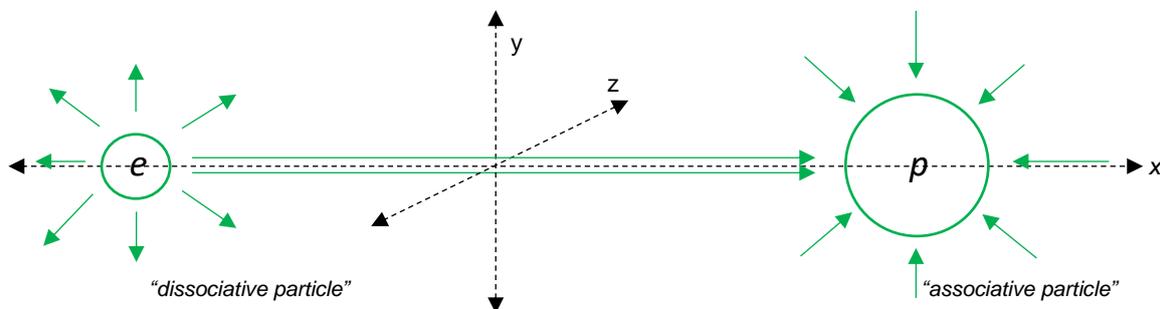

Figure 5: note the flow of mass away from the negative (dissociative) and towards the positive (associative). This is an arbitrary determination and could be either end of the x axis, the point of arbitration here is that the p-n area would be self-attractive, and the e-v region self-dissociative.

This then grants each of the 15 "matter" subatomic entities on the proton/neutron axis an "association" with the 15 "dissociative" subatomic entities on the electron axis. It is as though the 15 "dissociative" elementary particles would be the "dissociative" versions of the "associative" proton/neutron construct.

What we are considering here is the effect of the proton/neutron being "self-associative" (and this would represent the strong nuclear force [9]), and the electron being "self-dissociative" (and this would represent the weak nuclear force [10]), noting that the strong nuclear force is indicative of the electromagnetic coupling strength of the atom, 137 times as strong as electromagnetism. Gravity is thence proposed to be an emergent feature of a

particular EM "interference" (folding-over) effect, namely a basic primary EM mass-based (proton/neutron) "folding-over" feature, an electric component "folding-over" feature, and a magnetic component "folding-over" feature.

4. Mass-based Gravity (EG1)

As just introduced, this is the folded EM component of the standing wave along the x-axis (destructive interference as "0"). EG1 is also a determination of the force from one end of the phi-quantum wave-function scale (electron) to the other (proton), a force resulting in what is proposed to be a contraction of space. The feature here would nonetheless be beyond the EM attraction of the electron to the proton, yet as something related to an EM direct interference effect (a folding over), an idea that shall be presented in a subsequent paper when more time-equation theoretic tooling is available.

Nonetheless, we are proposing that the contraction prescribed as in previous papers ([2]; p12, eq.9) would represent an emergent feature that is coupled to the idea of the mass-based endpoint time-circles/ellipses (EM interference/resonance/folding-over).

5. Magnetic Particle Spin (EG2)

A key feature to our phi-quantum wave-function is that thus far we have considered the wave-function to develop along the x-axis, the electric component rising and falling in amplitude along the y-axis, and the magnetic component rising and falling along the z-axis. In fact, both the electrical and magnetic components would rise and fall in amplitude (arbitrarily defined) in both the y-axis and z-axis, and they would achieve this by their respective rotation "around" the x-axis (figure 6):
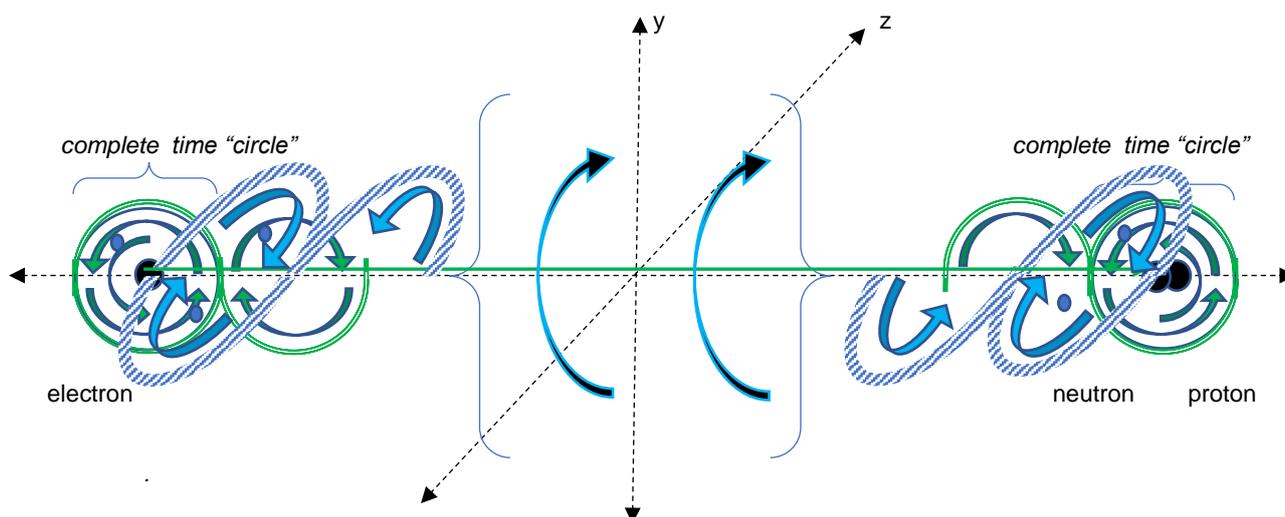

Figure 6: arbitrarily chosen direction of emergent gravity (EG2) around the x-axis. Note also that the effect of this spin on the x-axis electrical field component would result in a time "sphere" at each end of the x-axis

This rotation "around" the x-axis is proposed to represent the "spin" component of the elementary particles, as per figure 7.
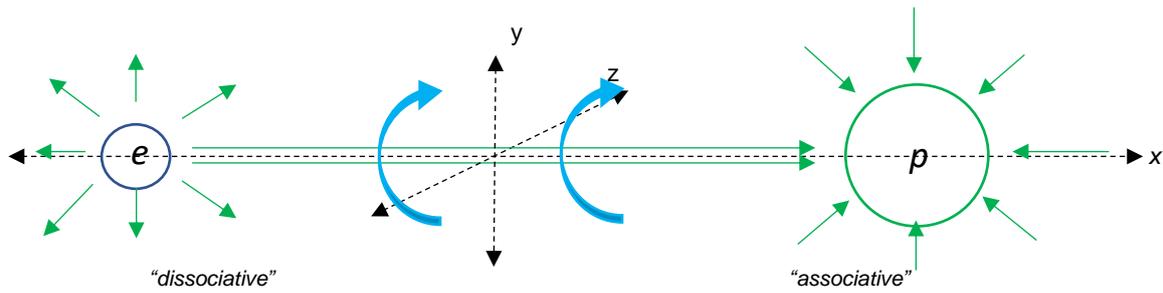
Figure 7: note the proposed (arbitrarily defined) direction of the magnetic component of force (blue) compared to the electrical (green). The actual direction of the magnetic component would be determined by the manner of emergence of the gravitational spin from the subatomic to the macro-scale. Shown is the accepted direction of magnetic field strength.

As the particles are inherently related to the phi-quantum wave-function, and this wave-function is spinning around the x-axis, then we have a particle spin likewise around this x-axis (figure 8):
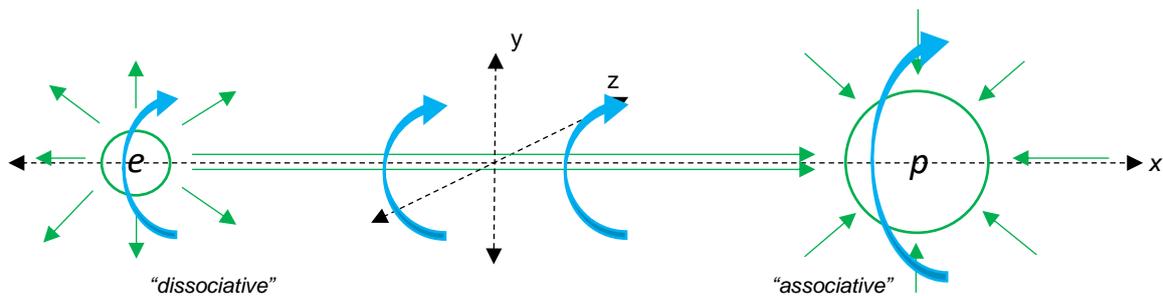

Figure 8: note the rotation of the particles as a magnetic component spin. Note the time-spheres represent the proton and neutron electrical components of the x-axis.

Per contemporary physics, spin is considered as the rotation of a particle around an axis. Note that spin here regarding a quantum is a ½ quantum value, as contemporary physics accepts. Likewise, given the condition of the speed of light on this scalar level, although the direction of spin can be changed (depending on type of polarity in play), an elementary particle cannot be made to spin faster or slower. And of course, as highlighted here, the spin of a charged particle would be associated with a magnetic dipole moment [11] with a *g*-factor [12] differing from 1, as per the process we are suggesting with the phi-quantum wave-function scale.

The conventional definition of the spin quantum number [13], *s*, is $s = n/2$ (where *n* can be any non-negative integer); hence the allowed values of *s* are 0, ½, 1, 3/2, 2, etc. As we know, the value of *s* for an elementary particle depends only on the type of particle, and cannot be altered in any known way; the spin angular momentum, *s*, of any physical system would thus be quantized, as is the basis here for the ½ determination of spin.

6.   Electron Crystal Shield (EG3)

The final idea of the emergence of gravity would take root from the "dissociative" effect of the electron on the folded electrical component of the EM wave-function (see fig. 5). We suggested that the electron could take on 15 locations in an electron cloud format ([2]; p15, fig.15). This would still be true, yet now (as we are suggesting the electron is "dissociative") the electron would thus arrange in this cloud according to points that would transcribe, logically, a platonic solid [14] (fig. 9), as the platonic solids represent geometrical shapes that would fit in a sphere where the points are a maximum distance from each other as a process of the points seeking maximum equal distance from each other, of course depending on the number of electron orientations we are considering.
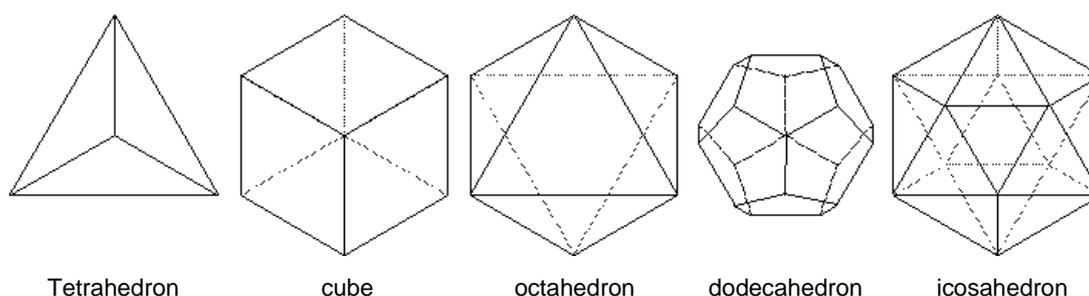

| Tetrahedron | cube | octahedron | dodecahedron | icosahedron |

Figure 9: The 5 platonic solids whose points/vertices represent the maximum distance the points can be locate from each other in the context of a point/crystal-sphere association of alignment.

In this way, the gravity-like field effect emerging here care of the electron being "dissociative" could be considered as a "weak" emergent force owing to the dominant force itself of electromagnetism and the force of electric charge. What though is the force of this so-proposed "dissociative" spreading of the particles despite its relative weakness? Is it gravitational or electric? It would be dissociative-EM (presumably decay), and thus what the name of it prescribes, a "weak" force (and thus would be more fundamental as a concept, more suitably explained in the context of the elementary particles, as shall be shortly addressed).

Nonetheless, this field effect in between the proposed dissociative points (care of the standing wave electrons) would represent a 2-d manifold. This surface area would represent the strongest region of dissociation between the electron particles, logically, and thus a type of energy field effect representative of the dissociative effect, a boundary if you will, to matter, an idea beyond the scope of the current theoretic tooling of the time-equation, to be thus taken up in a subsequent paper.

We could also propose that in the centre of surface-areas and volumes of these Platonic space is where matter could accumulate and thus these points would form lines with presumably mass-based gravitational *associative* properties, as per figure 10.
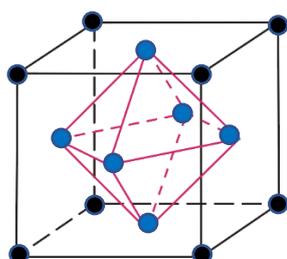

Figure 10: black dots on the cube crystal as the "dissociative" particle zones that would be inhabited by electrons in the electron shell, and the blue points as the "associative" particle zones. Note the interchange of shape of platonic solid, and this "virtual-matter" crystal would be merely a bridge of association by definition, as the actual "associative" points would exist centrally as the proton/neutron".

Note that figure 10 relates to the overall electron shell, and thus would encompass the entire atomic electron shell

structure; on the outer crystal, we would have the dissociative effect, and in the centre of each surface of the manifold flat plane joining these points as the crystal surface is proposed to exist points representing the mass obeying gravitational *associative* properties which themselves therefore would emerge as true crystal "solids" of mass. Something to consider is that the type of crystal employed by the electrons would be determined by the number of electrons in play in each shell and how those electrons would be involved with electrons from other atoms, once again all of such to be pursued in a subsequent paper when a greater tooling of the time-equation has been reached.

7. Phi-Quantum Wave-Function Crystal Dynamics

Are we nonetheless close to defining a particle as mass?

We presented that mass would represent a complete "π-singularity"" as a time/quantum-loop (fig. 3-4). Not only this, yet the emergence of mass would be associated to a contraction of distance in the phi-quantum wave-function. When all these features emerge together, they would do so as a singular emergent entity we would know as "mass". Exactly how though in considering the deeper functionality of the elementary particle level?

We know we need to have 15 elementary features associated to each the proton/neutron and electron axes, and that these elementary features would be relevant to the "time-circle" regions (fig. 3-4) for the proton/neutron and electron. Logically we should only consider a crystal structure once again, as a proposal. Which crystal structure though?

Let's go back to how we developed the spatial axes. We started at a 0-point for 0-scalar space, and developed three axes, each with two directions. Joining any equidistant point on each of the axes results in an octahedron (figure 11):
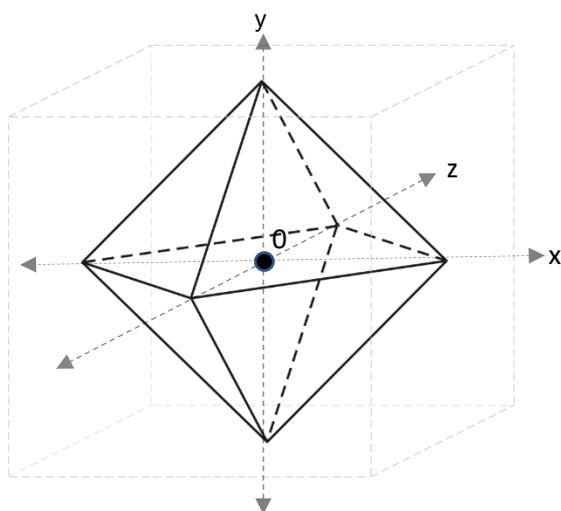

Figure 11: creating an octahedron from 0-scalar space for a time-circle/sphere. Note here that this is "different" to figure 10 in that here we are taking the geometry of individual points and not the entire electron-shell surface structure.

Let's now consider figure 6 again as a hypothetical proposal for one potential crystal structural organisation/dynamic, as it demonstrates an octahedron and a cube, which together in terms of vertices/points calculates the value of "14", "15" if we include the "0-scalar" reference point where the axes converge. Here in figure 12 we shall enlarge the view of the folded electrical component of the phi-quantum wave-function. Note that incorporating the idea of spin around the x-axis (electrical wave rotating around that x-axis) would form a virtual electrical wave "sphere".

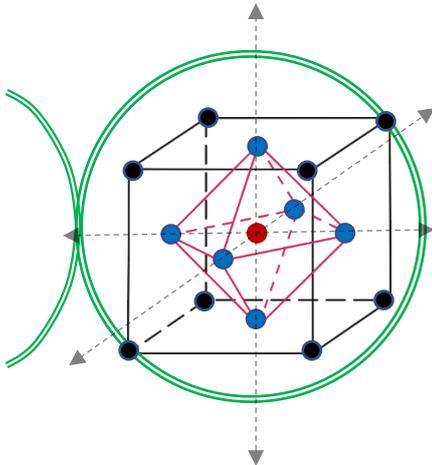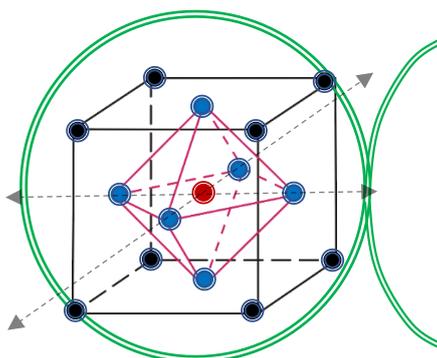*(phi-quantum <<<<<<<< proton (red) wave-function)*

Figure 12: 15 particles/points, three zones: inner most 0-reference (red), middle octahedron (6-points, blue), outer cube (8-points, black). One proposal is the 0-reference as the Higgs particle, the middle-octahedron representative of the generations (particle-spin) as perhaps "quarks", and the outer-cube the 8 types of perhaps "gluons" responsible for the "strong" nuclear force.

Essentially, we have 15 points including the central point; this would satisfy our requirement for the 15 subatomic entities for the proton/neutron axis, as presented in paper 2 ([2]: p15, fig14).

Yet what is "mass" regarding the time-circle per se, this folded wave-function?

Once again, these are proposals that need to be followed up with greater theoretic modelling, reserved for subsequent papers, yet considered as a possibility here nonetheless in granting the time-equation theoretic licence of development and utility.

In continuing, the electron in regard to this crystal would be different in that it would represent the dissociative analogue of the *p/n* associative domain, namely that we can only suggest the cube would represent the "dissociative" elementary particle set of the "associative" elementary set, the "weak nuclear force" manifold compared to the "strong nuclear force" manifold of the proton/neutron, all of such as proposals, much of what was presented in section 6, as per figure 13.

Figure 13: 15 particles/points, three zones: inner most 0-reference (red), middle octahedron (6-points, blue), outer cube (8-points, black). The proposal is the 0-reference is the electron, the middle-octahedron representative of either the generations (particle-spin) as "leptons" presumably responsible for the "weak" nuclear force.

electron (red)   >>>>>   (phi-quantum wave-function)

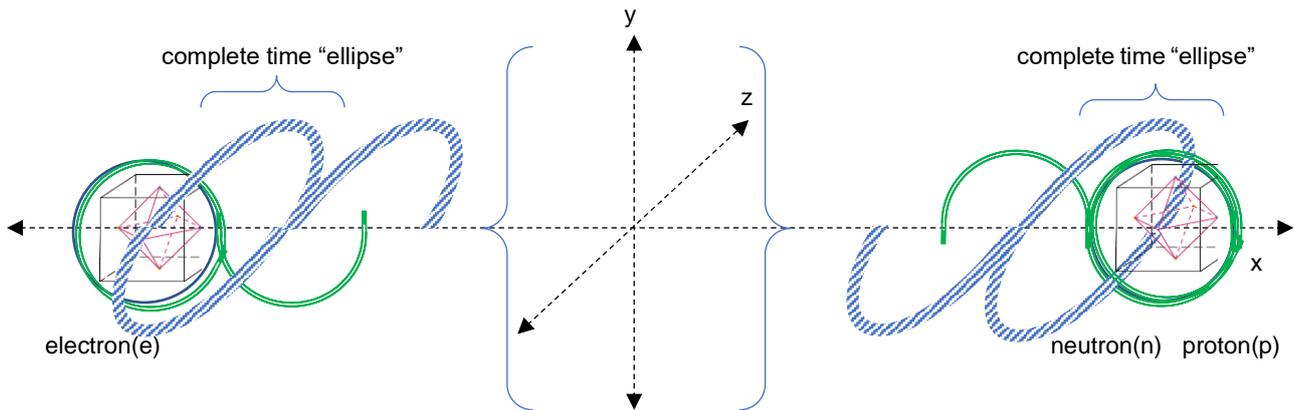Nonetheless, we end up with the following proposal, as per figure 14.

Figure 14: Note here the installment diagrammatically of the crystal topology for the electron and proton/neutron elementary particle families.

Particle physics is a vastly complicated and highly technical field of research, cataloguing definitions of particle-status regarding the energy, decay, spin, location, dynamic, interactions, and so on, of each elementary particle in relation to another. The current status of the golden ratio time-equation certainly seems to require more theoretic modelling to truly get to the bottom of elementary particle behaviour, however the only path ahead to continue with the theoretic tools currently available to this model and develop from such acquisitions, is to merely present proposals and determine their utility in structuring known data.

8.   Atomic Phi-Quantum Wave-Function Error Gradient

One overlooked feature of the time-equation and associated wave-function is the condition of time to define/trace π and the associated error there on the atomic level, overlooked in that it would more than likely point to a type of phenomena known in the form of observed data, observed data not accustomed to a potential time-equation atomic error-gradient explanation. So, let's look at this.

The error on the phi-quantum wave-function level is of the order of the actual value of π (3.1415926) subtracted from the atomic value of π (3.1416253) as per equation (3):

$$3.1416253 - 3.1415926 = 3.27 \cdot 10^{-5} \text{ (length)} \tag{3}$$

That is the value per unit increment of π on the phi-quantum wave-function level. If we then factor this in with the 19.8 length between the proton/neutron and electron on the elementary particle scale level (not the "extra-atomic (21.8) quantised level, as we are considering the idea of "mass" compression here), we get the following:

$$3.27 \cdot 10^{-5} \text{ x } 19.8 = 6.475 \cdot 10^{-4} \text{ (length}^2) \tag{4}$$

This value is the overall atomic-scaled error. If we consider that "mass" (proton and neutron) is the feature of the atom that accounts for this error, and according to the paper here "mass" represents a complete "π" circle, then we must now factor in a value of "π" as follows:

$$6.475 \cdot 10^{-4} \text{ x } \pi = 2.034 \cdot 10^{-3} \text{ (length}^3) \tag{5}$$

Thus, for the proton and neutron we have a volume factor (length^3) of $2.034 \cdot 10^{-3}$.

Simply, all the increments of error in the phi-quantum wave-function would be brought together as a circle.

What does this mean?

As this is a value for the proton and neutron, halving this value gives us a factor of mass-compression of the order of $1.017 \cdot 10^{-3}$.

This would be the $\pi\ error\ gradient$.

If we now considered this error gradient regarding mass **per** each actual calculated value for mass, say the mass of a neutron, we get the following:

$$\frac{\pi\ error\ gradient}{mass\ of\ neutron} = \frac{1.017 \cdot 10^{-3}.}{1.675 \cdot 10^{-27}} = 6.072 \cdot 10^{23} \tag{6}$$

This value represents that for every gram (g) regarding the neutron, for 1g of a neutron, there exists an error gradient value of $6.072 \cdot 10^{23}$. We could say the following:

$$\frac{6.072 \cdot 10^{23} \cdot mass\ of\ neutron}{\pi\ error\ gradient} = 1\ unit\ of\ mass \tag{7}$$

In other words, $6.072 \cdot 10^{23}$ neutrons with a factored phi-quantum wave-function error gradient would result in the value of 1g.

This number is remarkably close to Avogadro's number N$_A$ [16] which holds a value of $6.022 \cdot 10^{23}$.

The difference between these values is less than ~1% (0.8%) suggesting there could be another compression effect we haven't factored in.

That factor, according to the phi-quantum wave-function and fine structure constant association, could only $\frac{21.8}{22}$ as per the condition presented in paper 2 ([2]: p12) resulting in a slightly lower value than what we've calculated, a value of $6.02 \cdot 10^{23}$, practically matching with N_A.

Thus, the following equation involving an overall phi-quantum wave-function compression factor K_S, $(\frac{21.8}{22})$, and Avogadro's number N_A could be considered:

$$\frac{6.072 \cdot 10^{23} \cdot mass\ of\ neutron \cdot K_S}{\pi\ error\ gradient} = 1\ unit\ of\ mass \tag{8}$$

Note that the phi-quantum wave-function (π) error gradient is a measure of length^3 (and thus volume). Thus, this value states that there would be a standard for the organisation of mass such that a uniform increase in volume (length^3) would exist for the number of associated atoms for any given value of background pressure (heat, pressure, etc.).

For simplicity, the following would be true:

$$\pi\ error\ gradient\ =\ 6.022 \cdot 10^{23}\ \cdot\ mass\ of\ neutron \tag{9}$$

In other words, $6.072 \cdot 10^{23}$ neutrons with a factored **_total_** phi-quantum wave-function error gradient would result in the value of 1g.

How though is the $\pi\ error\ gradient$ a function of "time" regarding N_A and not mass?

As a function of time, the $\pi\ error\ gradient$ would represent the value of t_A as 21.8 (as the extra-atomic 21.8 "time-quantised" reference, and not the 19.8 compressed mass reference) per N_A as a way to factor in the atomic reference from the standpoint of a basic value for time.

Thus, the following would be true:

$$t_A\ =\ \frac{21.8}{N_A} \tag{10}$$

Thus, as a representation of "time" as t_B, the following applies:

$$t_B\ =\ \sqrt{\frac{21.8}{N_A}} \tag{11}$$

This is a value of $\sqrt{\frac{21.8}{6.02 \cdot 10^{23}}}$ which equates to $6.02 \cdot 10^{-12}\ s$. In the context of $t_N = 1$, as the spatial reference, as defined by the time-algorithm, $t_N\ =\ \frac{1}{f}$, we have a value of $1.66 \cdot 10^{11}\ s^{-1}$, $166\ GHz$ (*per time-now).*

How is this value significant?

Basically, regarding the error gradient, the equations suggest that there is an equal value of time that would account for a type of EM manifestation to the value of $166 GHz$ on an extra-atomic level (21.8). Is there any evidence of this in nature? This value of $166\ GHz$ is well within our findings for the cosmic background microwave radiation which peaks in intensity at $160\ GHz$.

Is the cosmic background microwave radiation in fact an ever-present feature of atomic existence and not a relic of an initial explosion (big bang)? We need to consider the idea that the error gradient represents a natural "stretch" value of $3.27\ \cdot 10^{-5}\ m.$ for each quantum of light and we would perceive this as a red-shift "assuming" our consciousness is adjusted to perceive and calculate our value for π as 3.1415926 regarding solar/stellar phenomena (and of course all space and time relevant to a perfect circle trace). Such still begs the question, namely "if there is a natural red-shift of light in play, and if also there is a natural background microwave radiation in play, both associated, as bound to a steady state golden-ratio temporal reality, can a big bang theory therefore be supported by the golden ratio time-equation?

9.   Conclusion

The initial paper [1] presented time to represent the three basic equations: $t_A\ =\ t_B^2, t_N = 1, t_N\ =\ t_A\ -\ t_B$, ([1]; eq. 3, 4, 5), giving rise to the overall equation of $\frac{t_A + t_B}{t_A} = \frac{t_A}{t_B}$ ([1]; eq. 6), providing two outcomes, two concepts, for time, φ (1.61803) and $\frac{-1}{\varphi}$ (−0.61803), as per the golden ratio. In short, the underlying premise was that time needs

to be relative to itself somehow to warrant the idea of "flow". The most basic mechanism we employed to achieve this flow was time "before" and "after", yet as the initial paper [1] highlighted it is more complicated than this. Now through these four papers it appears there is merit in considering the golden ratio as a code for time, given the number of equations it can link relevant to mass, energy, field forces, atomic phenomena, Avogadro's number, the CMBR, and so on; it hasn't failed completely as a theoretic device, yet nor has it succeeded completed as a theoretic device, hence the need for further crafting, and thus further paper development.

Conflicts of Interest

The author declares no conflicts of interest; this has been an entirely self-funded independent project.

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