

Editorial

The Dawn of a Brave New World in Particle Physics

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ABSTRACT

This issue of Prespacetime Journal celebrates the great success of LHC and Tevatron through a series of Special Reports written by Philip Gibbs, several Editorials and other regular pieces. All people associated with LHC and Tevatron deserve our special thanks. We are in the super-connected Age of Internet and technological wonders made possible through science. There is no doubt that we are also at the dawn of a brave New World in particle physics and science overall. Every genuine truth seeker should seize this moment. Here we briefly discuss: (1) the great unknown in light of the great success of LHC and Tevatron, (2) Higgsless models published in this journal; and (3) the search for the genuine “God Particle.” What we have witnessed so far is the rise of collaborative spirit in physics. We urge all genuine truth seekers to work together to make the brave New World a reality. We conclude with a poem “A Praise to Prespacetime.”

Key Words: LHC, Tevatron, Higgs boson, Higgsless model, God particle, prespacetime, brave New World.

1. The Great Success of LHC & Tevatron and the Great Unknown

As shown in the News articles, Special Reports and Editorial written by Philip E. Gibbs and published in this journal since the inception, both LHC and Tevatron have achieved great and historical successes. Further, according to Gibbs [1], another good thing about LHC is the way the experimental data are being handled: The data is being made available very quickly in contrast to a lot of other big-science experiments where the people running them keep the data to themselves for years so that they can analyze it in detail before anyone else has a chance. Gibbs states that “[t]he collaborations here are making extraordinary efforts to get the data out as soon as possible giving the whole physics community a chance to go through it. Science will progress faster that way so we should applaud them and hope that the theorists take full advantage of the opportunity being offered [1].”

Gibbs has commented that the current situation is similar to that of the discovery of DNA structure by Watson and Crick: “While Rosalind Franklin worked methodically through the analysis to get the chemical structure of DNA, Crick and Wilson decided that there could already be enough information. They just had to use some detective work and some good guesses to get there. I think the current position in HEP could be similar [1].” So, who will be the next Watson and Crick of HEP revolution? No one knows at this moment. Every hard-working genuine truth seeker has a chance.

Lawrence B. Crowell have also comments at viXra Log that “[i]t is a curious age we live in th[r]ough[:] The INTEGRAL data and now the EP presentation with 95% Higgs exclusion seems to suggest we are in a Michelson-Morely intellectual phase, where a vast edifice of scientific

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theory is on the verge of collapse.” If this is indeed the case, we may ask: Who will be the next Einstein? Again this is a great unknown at the present. And again, every hard-working genuine truth seeker has a chance.

Matti Pitkanen have further commented at viXra Log that “[t]o me the key question concerns the microscopic description of massivation: the description in terms of Higgs is after all a phenomenological model borrowed from condensed matter physics. The tragedy is that not only MSSM but also QFT limit of superstring models assumes Higgs mechanism and its generalization. Also inflationary cosmology does this. Several decades of theoretical physics can end up to a trash bin if Higgs based massivation turns out to wrong.” So, if superstring theories and supersymmetry based theories all fail, what comes to replace them? Yet again, this is a great unknown.

2. Higgsless Models Published in Prespacetime Journal

This journal have been publishing articles and running issues under the heading “New Possible Games in Town.” Below we mention Higgsless models published in the journal.

Giuliano Bettini

In “ ‘Electroweak Forces’ Acting on TE, TM & TEM” [2] and related articles, Bettini shows that that the energy impulse four-vector of the propagating electromagnetic field inside a waveguide and in free space can be described by a Dirac spinor and conjectures that the “weak forces” can be roughly interpreted as follows: The W boson acts as a (receiving or transmitting) horn antenna, performing the transformation $TEM \leftrightarrow TE, TM$, giving or subtracting mass to the field; the Z^0 boson is as a radar target acting on the TEM (neutrinos) with a Doppler frequency. He points out that these objects have mathematical counterparts in gauge fields and no Higgs boson is needed in the theory.

Lawrence B. Crowell

In “Time Paradox, Zitterbewegung and Noncommutative Geometry” [3], Crowell consider the zitterbewegung of the electron associated with an intrinsic time for an electron, or any of the fermionic particles with mass such as quarks and leptons. He showed that a massless particle coupled to noncommutative coordinate geometry is subjected to a gauge-like force. This force acts to trap the massless particle in an orbit within a region. This bottled massless particle then has an induced mass. This is then argued to be tied to fundamental aspects of physics, such as a dynamical Higgs model, as well as strings and p-brane theory.

Ervin Goldfain

In “Higgs-Free Symmetry Breaking from Critical Behavior near Dimension Four” [4], Goldfain introduces a Higgs-free model, starting from the infrared limit of Yang-Mills theory, in which symmetry breaking arises from critical behavior near dimension four. In this model, electroweak

bosons develop mass near the Wilson-Fisher point of Renormalization Group flow. Goldfain is able to recover the family structure of Standard Model using the technique of “epsilon expansion”. He also finds that dimensional regularization offers a straightforward solution to the cosmological constant problem.

Huping Hu & Maoxin Wu

In “Prespacetime Model of Elementary Particles, Four Forces & Consciousness” [5], Hu & Wu formulates a prespacetime model of elementary particles, four forces and consciousness. The model illustrates how the self-referential hierarchical spin structure of the prespacetime provides a foundation for creating, sustaining and causing evolution of elementary particles through matrixing processes embedded in said prespacetime. The prespacetime model illustrates the creation, sustenance and evolution of fermions, bosons and spinless entities and presents a unified causal structure for weak interaction, strong interaction, electromagnetic interaction, gravitational interaction, quantum entanglement, consciousness and brain function without the need of Higgs particle.

Alexander G. Kyriakos

In “Nonlinear Theory of Elementary Particle: IV. The Intermediate Bosons & Mass Generation Theory” [6] and related articles, Kyriakos describe the mechanism of generation of massive elementary particles based on his nonlinear theory of elementary particles. His theory indicates the possibility of the particle mass production by means of massive intermediate boson but without the presence of Higgs boson. It is shown that nonlinearity is critical for the appearance of particles’ masses.

Matti Pitkanen

In several articles published in this journal [7], Pitkanen discussed Higgless world based on a zero energy ontology in which particles are identified as 3-D light-like surfaces and massive particles are bound states of massless fermions and antifermions. The whole process is like a re-organization of massless states to massive representations. He points out that Higgs mechanism is non-microscopic approach borrowed from condensed matter physics but his method is bosonic emergence from the bound states of elementary fermions.

Gunn Quznetsov

In “It Is Not Higgs” [8] published in this journal, Quznetsov deduces the basic concepts, principles and statements of the electroweak and the quark-gluon theories and the theory of gravitation from properties of the point-like events probabilities. Quznetsov’s deduction is based a generalized Dirac equation. One part of such generalized equation corresponds to the Dirac’s leptonic equation and the other part corresponds to the Dirac’s quark equation. No Higgs particle is required.

Dainis Zeps

In “On to What Effect LHC Experiment Should Arrive” [9], Dainis also presents a kind of Higgless model in the sense that the perceived mass or massiveness in this world is projection of time from another world, that is, the other world is perceived as mass in our world in a hierarchical multitime structure.

3. Search for the Genuine “God Particle”

Higgs boson was dubbed as the “God Particle” by Leon Lederman [10] and hyped as such by the media. To many of us, Higgs boson should not be called the “God Particle.

The genuine “God particle” should have at least the following explanatory powers:

- a) Explanation of the creations of bosons and fermions;
- b) Explanation of gravitatonal force;
- c) Explanation of the strong force;
- d) Explanation of the weak force;
- e) Explanation of the electromagnetic force;
- f) Explanation of the origin of the Universe;
- g) Explanation of or relation to Consciousness; and
- h) Etc.

At the dawn of a brave New World, this issue marks a new beginning for Prespacetime Journal as a vehicle for physicists, mathematicians and other learned scholars publish their research results and express their views on fundamental physics and related topics. We hope that all genuine truth seekers shall become clear in our eyes, resolute in our hearts and swift in our steps in the pursuit of fundamenal physics and truth overall. What we have witnessed so far is the rise of collaborative spirit in physics. We urge all genuine truth seekers to work together to make the brave New World a reality.

4. A Praise of Prespacetime (Poem)

We draw a close to this Editorial with a poem. Some readers may find it to be trying on their nerves. In that case, please relax deeply and remember that it is a poem!

A Praise to Prespacetime

Oh, Prespacetime, you seem invisible to naked eyes, untouchable by hands,
Yet you are mathematically omnipresent, omniscient:

“*e*” is your body, ether, the foundation of existence;
“*i*” is imagination, a faculty of your mind, the source of creativity;
“0” is initial state of your mind; emptiness, nothingness;

“ $1=e^{i0}$ ” is your primal state, oneness, unity of existence;

Oh Prespacetime, you seem silent in voice, absent in physical action,
 Yet you are mathematically omnipotent, omni-active:

“+ , - , * , / , =” are your operations of existence;

“ c, \hbar, π ” are your measuring units of existence;

“*matrix*” is your container for governing rules, external/internal world;

Thus,

You make the identity revealed to Euler to hold as follows:

$$e^{i\pi} + 1 = 0$$

You make primordial distinction to occur as follows:

$$1=e^{i0}=e^{i0}e^{i0}=e^{iL-iL}e^{iM-iM}=e^{iL}e^{iM}e^{-iL}e^{-iM}=e^{iL}e^{-iM}/e^{-iL}e^{-iM}=e^{iL}e^{iM}/e^{iL}e^{iM}...$$

You create energy-momentum-mass relationship revealed to Einstein as follows:

$$1 = e^{i0} = e^{-iL+iL} = L_e L_i^{-1} = (\cos L - i \sin L)(\cos L + i \sin L) =$$

$$\left(\frac{m}{E} - i \frac{|\mathbf{p}|}{E}\right) \left(\frac{m}{E} + i \frac{|\mathbf{p}|}{E}\right) = \left(\frac{m - i|\mathbf{p}|}{E}\right) \left(\frac{m + i|\mathbf{p}|}{E}\right) = \left(\frac{m^2 + \mathbf{p}^2}{E^2}\right) \rightarrow$$

$$E^2 = m^2 + \mathbf{p}^2$$

You create, sustain & make evolving an elementary particle as follows:

$$1 = e^{i0} = e^{i0}e^{i0} = e^{-iL+iL}e^{-iM+iM} = L_e L_i^{-1} (e^{-iM}) (e^{-iM})^{-1} \rightarrow$$

$$\begin{pmatrix} L_{M,e} & L_{M,i} \end{pmatrix} \begin{pmatrix} A_e e^{-iM} \\ A_i e^{-iM} \end{pmatrix} = L_M \begin{pmatrix} A_e \\ A_i \end{pmatrix} e^{-iM} = L_M \begin{pmatrix} \psi_e \\ \psi_i \end{pmatrix} = L_M \psi = 0$$

As an example of your mighty power,
 you create, sustain & make evolving of an electron revealed to Dirac as follows:

$$\begin{aligned}
 1 &= e^{i0} = e^{i0} e^{i0} = e^{-iL+iL} e^{-iM+iM} \\
 &(\cos L - i \sin L)(\cos L + i \sin L) e^{-iM+iM} = \\
 &\left(\frac{m}{E} - i \frac{|\mathbf{p}|}{E}\right) \left(\frac{m}{E} + i \frac{|\mathbf{p}|}{E}\right) e^{-ip^\mu x_\mu + ip^\mu x_\mu} \\
 &= \left(\frac{m - i|\mathbf{p}|}{E}\right) \left(\frac{m + i|\mathbf{p}|}{E}\right) e^{-ip^\mu x_\mu + ip^\mu x_\mu} \\
 &= \left(\frac{m^2 + \mathbf{p}^2}{E^2}\right) e^{-ip^\mu x_\mu + ip^\mu x_\mu} = \frac{E^2 - m^2}{\mathbf{p}^2} e^{-ip^\mu x_\mu + ip^\mu x_\mu} \\
 &= \left(\frac{E - m}{-|\mathbf{p}|}\right) \left(\frac{-|\mathbf{p}|}{E + m}\right)^{-1} \left(e^{-ip^\mu x_\mu}\right) \left(e^{-ip^\mu x_\mu}\right)^{-1} \rightarrow \\
 \frac{E - m}{-|\mathbf{p}|} e^{-ip^\mu x_\mu} &= \frac{-|\mathbf{p}|}{E + m} e^{-ip^\mu x_\mu} \rightarrow \frac{E - m}{-|\mathbf{p}|} e^{-ip^\mu x_\mu} - \frac{-|\mathbf{p}|}{E + m} e^{-ip^\mu x_\mu} = 0 \\
 \rightarrow \begin{pmatrix} E - m & -|\mathbf{p}| \\ -|\mathbf{p}| & E + m \end{pmatrix} \begin{pmatrix} a_{e,+} e^{-ip^\mu x_\mu} \\ a_{i,-} e^{-ip^\mu x_\mu} \end{pmatrix} &= (L_{M,e} \quad L_{M,i}) \begin{pmatrix} \psi_{e,+} \\ \psi_{i,-} \end{pmatrix} = L_M \psi = 0 \\
 \rightarrow \begin{pmatrix} E - m & -\boldsymbol{\sigma} \cdot \mathbf{p} \\ -\boldsymbol{\sigma} \cdot \mathbf{p} & E + m \end{pmatrix} \begin{pmatrix} A_{e,+} e^{-ip^\mu x_\mu} \\ A_{i,-} e^{-ip^\mu x_\mu} \end{pmatrix} &= (L_{M,e} \quad L_{M,i}) \begin{pmatrix} \psi_{e,+} \\ \psi_{i,-} \end{pmatrix} = L_M \psi = 0
 \end{aligned}$$

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