Transactions on Engineering and Computer Science

Mini-Review | Vol 1 Iss 1

Superunified Field Theory

Besud Chu Erdeni*

Unified Theory Lab, Bayangol disrict, Ulan-Bator, Mongolia

***Corresponding author:** Erdeni BC, Unified Theory Lab, Bayangol disrict, Ulan-Bator, Mongolia; Tel: + 976-99090138; E-mail: superunified[at]yahoo.com

Received: April 18, 2020; **Accepted:** May 07, 2020; **Published:** May 14, 2020

Abstract

This is a briefest possible introduction to the absolute geometry of space, time, and matter. Absolute geometry or the post-Euclidean geometry does automatically lead to the superunified theory of quantized fields and fundamental interactions. In general, we have eventually constructed the ultimate system of universal mathematical harmony observed by us as the physical Universe. No work in theoretical physics and pure mathematics directly precedes to this theory we propose. Instead, it accomplishes original Pythagorean (arithmetisation) and Platonic (geometrization) concepts of natural philosophy integrated afterwards by Jiordano Bruno.

1. Description

To cope with the super unification problem, we need to reformulate Newton's First Rule of Reasoning in the following extreme minimax form: Logic is what achieves the greatest possible by the least possible.

Then, the greatest is the physical Universe, while the least is the mathematical point in Euclid's definition. Consequently, we would look for a constructive compass-and straightedge algorithm for transforming a point into the cosmological Existence. For this purpose, it suffices just to denote the radius of any given circle not by the unity 1 (as usually the case), but, instead, by the extreme and mean ratio constant Φ (Phi) and see what happens (Fig. 1).

Such is the bifurcation procedure of the Euclidean geometry. Now in the post-Euclidean absolute geometry we are free to postulate that

(α) $\Phi \equiv$ **Newton's absolute mathematical space.**

And secondly,

(β) $\left\{ i_1 = \sqrt{\Phi} \right\} \equiv$ **Newton's absolute true and mathematical time.**

Citation: Erdeni BC. Superunified Field Theory. Trans Eng Comput Sci. 2020;1(1):103.

Therefore, the four-dimensional space-time will obviously be, by definition,

$$(\chi) \qquad \Phi^3 i_1 \equiv 5.38836170405705346489638455689 8\ldots$$

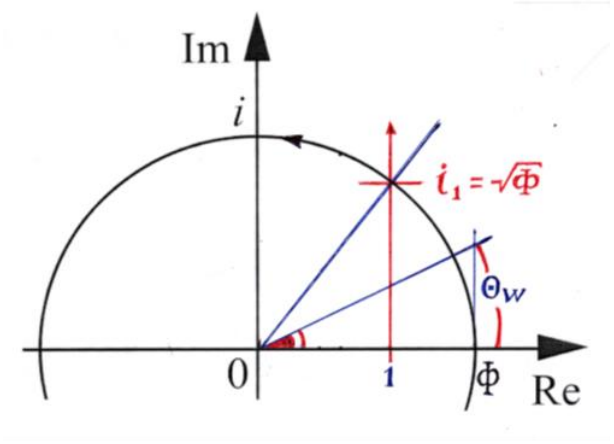

Fig. 1. Bifurcation procedure of the Euclidean geometry.

It implies simply that the method of mathematical description of reality is intrinsically bifurcated into the symbolic (analysis) and numeric (synthesis) ways, the two ways are necessarily complimentary [1-5].

$$(x, y, z, t) \Leftrightarrow \Phi^3 i_1 \qquad (1)$$

In Nature there is, by the very idea of consistence of the physical reality, no paradoxes and anomalies, of course. However, Dirac's quantum-relativistic equation for the electron appears to be imprecise compared with experiments. Accordingly, the electron magnetic moment anomaly defines the measure of our ignorance in the modern theoretical physics and much beyond. Now we have entered the realm of absolute knowledge to hope to compute the post-Dirac effect of QED in simplest possible ways, including

$$\frac{1}{a_e = 0.001159652099\ldots} = \sqrt[\Phi^3 i_1]{658361 \cdot 10^{10}} \qquad (2)$$

Such whole numbers as previously we will call Harmonious Integers (HI). The HIs are never accidental; they do occur by some fundamental reasons of the system of mathematical harmony. In absolute geometry the Euler's operator bifurcates into whatever possible super- and ultra-operators like

$$\left\{e^{(2)\pi i} = \pm 1\right\} \to e^{\Phi \pi i_1} \to e^{2\Phi \pi i_1} \to \ldots \to e^{5\Phi \pi e i_1 \sqrt{2}} \to \ldots \qquad (3)$$

Therefore, the HI 658361 is justified by

$$658361 \cdot e^{5\Phi \pi e i_1 \sqrt{2}} = \frac{1865921}{3} 10^{54}; \qquad (4)$$

$$\sin 54 = \frac{\Phi}{2}. \qquad (5)$$

Besides, as it is seen in Figure 1, the universal golden-algorithmic angle has to be postulated as that of the electroweak force

$$(\delta) \qquad \arctan\frac{1}{2} = \Theta_{Weinberg}.$$

Accordingly,

$$\sin\Theta_W \sqrt{\frac{1}{a_e = 0.001159652099833...}} = 3667438. \qquad (6)$$

Moreover,

$$\sin\Theta_W \cos\Theta_W \sqrt{\frac{1}{a_e = 0.0011596521000...}} = 21836383. \qquad (7)$$

Although in the above we have already proved the viability of our $\alpha\beta\chi\delta$ –postulates of absolute geometry, we need to proceed a bit further just to show the nontrivial character of the new paradigms we introduce herewith [6].

The Fundamental theorem of the universal system of mathematical harmony (FTMH) is

$$\boldsymbol{X}^{\Phi\pi e}\boldsymbol{X} = \mathbf{10}^{\mathbf{90}}. \qquad (8)$$

Therefore, the new world constant that represents universal harmony and related mathematical symmetries is

$$\boldsymbol{X} = 1185403.539676801580748319426 33... \qquad (9)$$

Secondly, the time dimension is bifurcated into the absolute global cosmic time and the relative local time

$$\{\Phi = i_1\} \leftrightarrow \left\{i_2 = \frac{4}{\pi}\right\}. \qquad (10)$$

The second case owes to some subtle algorithmic reasons we here omit. Consequently, the 4-dimensional curved and torsional Newton/Einstein absolute/relative space-time shall be written as follows below:

$$\pi\frac{\Phi^3\sqrt{i_1 i_2}}{\text{Spin}} = 19.55618474... \qquad (11)$$

Remind that we work at the deepest possible level of reality where the HI 21836383 occurred. Therefore, the following fundamental connection is foreseeable:

$$21836383\cdot\pi\frac{\Phi^3\sqrt{i_1 i_2}}{\text{Spin}} = 427036340. \qquad (12)$$

And it is inevitable the post-Dirac effect will in the end owe to the entire system of harmony

$$\frac{\Phi\pi e+1\sqrt{\mathbf{10^{90}}}\cdot e^{5\Phi\pi i_1 e\sqrt{2}}}{\mathbf{427\,036\,340}}=\frac{10^{58.000...}}{\mathbf{expexp}\boldsymbol{e}}, \tag{13}$$

where the exponential function on the right images the cosmological fact that at first was Nothing else that pure (not applied!) mathematics to be made use of in the Creation Act.

Both in cosmogony and cosmology takes place the ideal self-growth. In general, the extreme and mean ratio algorithm and the organic growth process out of Nothing else than mathematical point are equivalent algebraically, for

$$1000\Phi \simeq e^{ee}. \tag{14}$$

Now we move to the problem of matter. We postulate that the space and time vectors intercross either by the straight angle or by the angle equal to

$$\Delta_{Exprm.}=\frac{1}{\alpha_{Sommerfeld}}=137.035999...^{\circ}. \tag{15}$$

In the first case it is electromagnetic waves or the photon. The second case provides us with the general model for the fundamental fermion (spinor) particles. As a consequence, there arises the nonlocal space-time quantum gyroscope (Fig. 2)

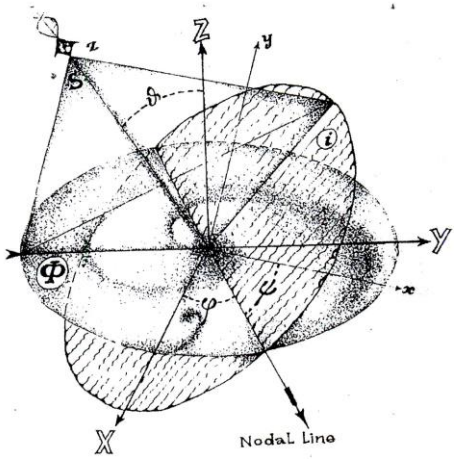

Fig. 2. The nonlocal space-time quantum gyroscope.

It is derivable in many ways, including the most standard

$$\sqrt[e]{\left\{\Phi\cdot(\Delta_{Exprm.}\cdot\ \perp)\cdot\ i_1\right\}^{\Phi\pi i_1}}=\mathbf{3}\cdot 10^{9.9999...}. \tag{16}$$

As for the dimensionality problem, absolute geometry respects the Cartesian dimension of space-time as (3+1) and refers simultaneously to the absolute Phi-dimensions. Thus, quite a full image of space-time will be

$$\left\{\pi\frac{\Phi^3\sqrt{i_1 i_2}}{\text{Spin}}\cdot\dim_{\Phi}\Phi^3 i_1\cdot(3+1)\right\}=3.5\times 4\,. \tag{17}$$

In the global cosmic space-time defined above the space-time quantum gyroscope (STQG) will never rest; it is doomed to translate and rotate. We have

$$\left\{\pi\frac{\Phi^3\sqrt{i_1 i_2}}{\text{Spin}}\cdot\dim_{\Phi}\Phi^3 i_1\cdot(3+1)\right\}\cdot \\ \cdot\left\{\Phi\cdot(\Delta_{Exprm.}\cdot\ \perp)\cdot\ i_1\right\}=\mathbf{6949776.} \tag{18}$$

As it is easy to guess, the HI 6499776 is justified by the existence of the FTMH

$$6949776\times\Phi\pi e=\frac{864261787}{9}\,, \tag{19}$$

where the standard first order approximation precision is

$$\Phi=1.618\ 033\ 988\ldots \tag{20}$$

Obviously,

$$\frac{\text{Absolute space}}{\text{Absolute time}}=\text{Absolute velocity}\,. \tag{21}$$

Besides, because of spontaneous and intentional correlations of measurement units, the velocity of light has to be a theoretical number directly calculable in absolute geometry, indeed,

$$\mathbf{299792458}^{\pi}=\mathbf{427285}\cdot 10^{20.999999999\ldots}\,. \tag{22}$$

One can foresee that

$$\mathbf{427285}\cdot\frac{\Delta_{Exprm.}}{\sin\Delta_{Exprm.}}=\mathbf{85913574}\,. \tag{23}$$

The HI 25913574 comes from the Sancta Sanctorum of absolute geometry which case we are compelled to omit for brevity's sake.

Now it will suffice in brief if we derive the unit particle of matter. We have the pentad of fundamental physical constants whose bare numeric coefficients are

$$\left\{\begin{array}{l} G = 6.673 \\ h = 6.62606876 \\ m_e = 9.109381388 \\ e^{\pm} = 1.602176462 \\ c = 2.99792458 \end{array}\right\}. \qquad (24)$$

Each of these fractions can be derived and computed applying to fundamental principles. The bare numeric gravitational constant does infinitely tend to the finite fraction 6.673. The origin of gravitation lies among others in such simplicities as

$$\mathbf{65537}^{G_{Newton}(6.673)} = \Phi\pi e \cdot 10^{30.9999\ldots}; \qquad (25)$$

$$G^{GG} = \Phi\pi \cdot 10^{35.999999\ldots}. \qquad (26)$$

As seen, Newton's theoretical physics and Gauss's pure mathematics can and must be directly unified to explain the Universe.

The expression next comes from the Sancta Sanctorum and thus its explanation would need full knowledge of the system we have been introducing

$$\pi \frac{\Phi^3 \sqrt{i_1 i_2}}{\mathrm{Spin}} = \sqrt[6.673]{\mathbf{413\,750\,953}}. \qquad (27)$$

Absolute dimensions, or else, absolute-geometric prototypes, of physical constants can be easily defined if only we know what is the prototype of mass in our geometry. Fortunately, the STQG is somewhat calculable in classical mechanics giving its abstract mass as the Pythagoras constant

$$\dim m = \sqrt{2}. \qquad (28)$$

So, for example,

$$\dim G = \frac{\Phi^2}{\sqrt{2}}. \qquad (29)$$

As a result, gravity looks a Golden-algorithmic phenomenon

$$\left\{\pi \frac{\Phi^3 \sqrt{i_1 i_2}}{\mathrm{Spin}}\right\}^{G \dim G} = \cos\Theta_W \cdot 10^{16.0000\ldots}. \qquad (30)$$

If summarize,

$$\dim(Ghm_e e^{\pm} c) = \Phi^5 \sqrt{2}\sqrt{\sqrt{2}}\,. \tag{31}$$

Therefore, we are now prepared to write the gravi-electromagnetic electron dreamed of by Einstein since the earliest of the unified field theory problem

$$\left\{\begin{matrix}\left\{\Phi\cdot(90\times 137.035999...)\cdot i_1\right\}\cdot \\ \cdot Ghm_e e^{\pm} c\cdot\dim(Ghm_e e^{\pm} c)\end{matrix}\right\} = \sqrt[\pi]{\mathbf{142736}\cdot 10^{23}}\,. \tag{32}$$

The electroweak electron of the Standard model is subject to the same p-rule of geometry:

$$\left\{\begin{matrix}\left\{\Phi\cdot(90\times 137.035999...)\cdot i_1\right\}\cdot \\ \cdot Ghm_e e^{\pm} c\cdot\dim(Ghm_e e^{\pm} c)\end{matrix}\right\}\frac{\Theta_W}{\sin\Delta_{Exprm.}} = \sqrt[\pi]{\frac{10^{37}}{\mathbf{7043}}}\,. \tag{33}$$

The spin is an intrinsic property of the quantum gravi-electroweak gyroscope

$$\left\{\left\{\begin{matrix}\left\{\Phi\cdot(90\times 137.035999...)\cdot i_1\right\}\cdot \\ \cdot Ghm_e e^{\pm} c\cdot\dim(Ghm_e e^{\pm} c)\end{matrix}\right\}\frac{\Theta_W}{\sin\Delta_{Exprm.}}\right\}\cdot \\ \cdot\frac{\dim_{\Phi}\Phi i_1}{\mathrm{Spin}} = \sqrt[\pi]{\frac{10^{37}}{\mathbf{1254}}}. \tag{34}$$

Just an example of how “Die ganzen Zahlen hat der liebe Gott gemacht, alles andere ist Menschenwerk” (Leopold Kronecker):

$$\sqrt[e]{\mathbf{1254}^{\Phi\pi i_1}} = \frac{\mathbf{210\,918\,649}}{9}\,. \tag{35}$$

Let us investigate self-gravitational space-time (30) accurately. Due to the self-perturbation of the entire system it yields

$$\left\{\pi\frac{\Phi^3\sqrt{i_1 i_2}}{\mathrm{Spin}_{\cos 30}}\right\}^{G_{\mathbf{6.673}}\dim G} = \cos\Theta_W\cdot 10^{16}\left\{1+\varepsilon = \frac{1}{25251.80457}\right\}. \tag{36}$$

And one can foresee that

$$\frac{\sqrt[\Phi\pi e+1]{\mathbf{10^{90}}}\times e^{5\Phi\pi e i_1\sqrt{2}}}{25251.80457}\cdot\frac{\mathbf{676456}}{3} = 10^{61}. \tag{37}$$

If go even further, then the process will end up with the self-reference of geometry such that

$$\mathbf{676456}\cdot\pi\frac{\Phi^3\sqrt{i_1 i_2}}{\mathrm{Spin}_{\cos 30}} = \frac{\mathbf{26457797}}{2}\,. \tag{38}$$

By the way, both the teachers and students of modern physics seem to have forgotten that in classical quantum mechanics

$$\mathrm{Spin} = \cos 30^\circ . \tag{39}$$

Besides, only trigonometric parameters are absolute with the consequence that any system pretending to be absolute is destined to make use of such parameters as

$$\cos 30^\circ,\ \ 137.035999...^\circ,\ \ 26.5505118...^\circ.$$

The nuclear strong force angle is

$$\frac{\pi}{3} - \Theta_{W\,(electroweak)} = \Theta_{STR.} . \tag{40}$$

It is a most subtle problem of which analysis goes beyond this introduction. We here mention only that the inner geometry of point-singularity, that is, fundamental fermions (spinors) can be integrated in the following algebraic structure such that

$$\frac{\Delta_{Exprm.}\Theta_W \cdot 2\Theta_{STR.}}{\sin\Delta_{Exprm.}\sin\Theta_W \cos\Theta_W \cos 2\Theta_{STR.}} . \tag{41}$$

Its derivation in geometry is as standard in geometry as

$$\frac{\Delta_{Exprm.}\Theta_W \cdot 2\Theta_{STR.}}{\sin\Delta_{Exprm.}\sin\Theta_W \cos\Theta_W \cos 2\Theta_{STR.}} = \sqrt[\Phi\pi e]{\frac{10^{81.0000000...}}{\mathbf{21283}}} . \tag{42}$$

The logos of internal and external geometries of singularity is as simple as

$$\mathbf{21283}\left\{\pi\frac{\Phi^3\sqrt{i_1 i_2}}{\mathrm{Spin}_{\cos 30}}\right\}\dim_\Phi\left\{\pi\frac{\Phi^3\sqrt{i_1 i_2}}{\mathrm{Spin}_{\cos 30}}\right\}(3+1) = \mathbf{5827}000 . \tag{43}$$

We have obtained quite a complete geometry and thus we are obliged now to derive physical phenomenology. So

$$\mathbf{5827}\cdot\left\{Ghm_e e^{\pm}c \cdot \dim(Ghm_e e^{\pm}c)\right\} = \mathbf{210\ 258\ 090} . \tag{44}$$

The last HI is justifiable by a standard procedure such that

$$\sqrt[e]{\mathbf{210\ 258\ 090}^{2\Phi\pi i_1}}\cdot\frac{\mathbf{229}}{9} = 10^{40.999999...} . \tag{45}$$

Consequently, we discern that the HI229 must be something most specified and powerful in the system of the universal mathematical harmony. Why?

We here omit the problem of the cosmological quantum Big bang scenario mentioning only that it owes to the following integrated mechanism

$$\frac{\exists}{©@}. \tag{46}$$

Interpret the newly discovered constant such that

$$\begin{aligned}\exists &= \mathbf{571}\ 100\ 522\ 647\ 717\ 554\ 761\ 906\ 724\ 501\ldots;\\ \exists^{-1} &= \mathbf{175}\ 100\ 522\ 647\ 717\ 554\ 761\ 906\ 724\ 501\ldots\end{aligned} \tag{47}$$

In theoretical practice we use a fraction 5.71100522…

There exist also such quantum leap constants as

$$\begin{aligned}©&= 0.56714329040978387299968\ldots;\\ @ &= 0.39901297820252071596470 81\ldots\end{aligned} \tag{48, 49}$$

The meaning of these constants are simple

$$\begin{aligned}e^{©} &= -©^{-1}; \qquad \ln©= -©;\\ 10^{@} &= @^{-1}; \qquad \lg@ = -@.\end{aligned} \tag{50, 51}$$

Before we have had the constant of mathematical harmony $\boldsymbol{X}$ and the ultra-operator of all the basic mathematical symmetries. Therefore, we are prompted to compose the following tri-unity mechanism of fundamental self-perturbations of mathematical continuum:

$$\frac{\exists}{©@}\cdot\left\{\boldsymbol{X} = \sqrt[\Phi\pi e+1]{10^{90}}\right\}\cdot e^{5\Phi\pi e i_1\sqrt{2}}. \tag{52}$$

It should be pointed out that in terms of the first order approximations the universal mathematical machinery works as the 10-digit portable electronic calculator equipped with enough number of memory cells. The installed Microsoft calculator changes little. The reason is that the machinery makes allowances always considering self-perturbation effects of the system. Secondly, higher order approximations to those perturbative effects are always possible within the framework of absolute geometry and they are elementary provided that one knows the unified theory in full and able of using some heuristic technique.

Therefore, we compute applying to the portable 10-digit CASIO scientific calculator so that to arrive at the greatest discovery in the history of classical pure mathematics

$$\frac{\exists}{©@}\cdot\left\{\boldsymbol{X} = \sqrt[\Phi\pi e+1]{10^{90}}\right\}\cdot e^{5\Phi\pi e i_1\sqrt{2}} = \{\mathbf{3,5,17,257,65537}\}_{+}^{\times}\cdot 10^{46.999\ldots}. \tag{53}$$

Absolute geometry from the beginning introduces the concept of topological densities expressed by a general form

$$\{x+y+z+\ldots\}\{xyz\cdot\ldots\} = \{\mathbf{x,y,z,\ldots}\}_{+}^{\times}\ . \tag{54}$$

In the above given case, we have the topological density of regular polygons defined by the Fermat's five primes specified in turn by the Gauss's theory of equations in the imaginary number domain. Thus, absolute geometry is the genuine post-Euclidean geometry.

As it is easy to discern, it is topological density that makes the virtual mathematical machinery (Software) look as if physical, or material, Universe (Hardware).

The HI229 generating both internal and external geometries come from a fundamental

$$\left\{\frac{\exists}{©@}\cdot\left\{\boldsymbol{X}=\sqrt[\Phi\pi e+1]{10^{90}}\right\}\cdot e^{5\Phi\pi e i_1\sqrt{2}}\right\}\cdot\mathbf{229}=\left\{4\Phi=2/\cos 72\right\}\cdot 10^{62.99999...}, \qquad (55)$$

which in turn leads to mathematical biology, including the problem of human genetics.

The $\Phi\pi e$-theorem embodies statically the overall rigid mathematical symmetries. But, all the symmetries are broken dynamically leading to the two anomalies of the modern physics

$$\boldsymbol{X}\to\alpha a_e\,. \qquad (56)$$

So, it is up to the reader to approximate the fundamental rate of violation of symmetries.

If summarize, it is notably the *a priori* existing concept of harmonious integers, though asymptotical, that makes the Universe absolutely provable and calculable.
It will suffice to know the following scheme of bifurcation inside the body of mathematics to obtain the rest technically by any wishful one and at any time (57) [7-9].

$$\boldsymbol{X}^{\Phi\pi e}\boldsymbol{X}=\mathbf{10}^{\mathbf{90}}$$

Analysis (*Symbolic*)		**Synthesis** (*Numeric*)
$x^N-1=0$	$\Leftrightarrow$	$\boldsymbol{x}^2-\boldsymbol{x}-\mathbf{1}=\mathbf{0}$
$\Downarrow$		$\Downarrow$
Radix **1**	$\rightleftarrows$	Metric $\boldsymbol{\Phi}$
$\Downarrow$		$\Downarrow$
$e^{(2)\pi i}=\pm 1$	$\rightleftarrows$	$e^{5\Phi\pi e i_1\sqrt{2}}$
$\Downarrow$		$\Downarrow$
$\Psi(x,t)$	$\Leftrightarrow$	$\{\Phi\cdot i_1\}$

- Superunified Field Theory -

Fundamental theorem of pure mathematics

Funadamental theorem of absolute geometry

$$\frac{1}{©@}=\frac{\cos^2 i}{\Phi^3 i_1}\quad\rightleftarrows\quad\frac{\Phi}{i_{1,2}}=\frac{\text{Spin}}{\sin\Delta_{\alpha,\beta,Exprm.}}$$

2. Conclusion

This theory derives What Is at all from most fundamental principles and describes the Universe at all levels of cosmological evolution. Since theoretical physics ends up with the absolute numeric calculus, the future science and technology developments will entirely owe to the computer simulation of absolute geometry. Automatization of calculations in geometry and tabulation of significant results for subsequent interpretations will be the first step accessible to any group of university students. And then simulation of spontaneous dynamics of the universal system is supposed to lead to truly revolutionary solutions in technology such as normal temperature superconductivity.

REFRENCES

1. Erdeni BC. Elements of mathematical cosmogony. Adv Theo Comp Phy. 2019;2(4):1-8.
2. Erdeni BC. Axiomatics of Cosmology. Adv Theo Comp Phy. 2019;2(4):1-10.
3. Heath TL. The Thirteen books of Euclid's Elements. Cambridge; 2015.
4. Gauss KF. Equations Defining sections of a Circle. Disquisitionis Arithmeticae. Springer, New York, NY; 1986: 407-460p.
5. Gödel K. Über formal Unentscheidbare Sätze der principia mathematica und verwandter systeme I. Monatsh. f. Mathematik und Physik. 1931;38: 173–198.
6. Newton I. The Principia. 1995. [Online]. Available: https://www.bookdepository.com/Principia-Sir-Isaac-Newton/9780879759803
7. Berndt BC. Srinivasa Ramanujan's Note Books. 1971;51(3):147-164.
8. Weinberg S. Dreams of a final theory: The Scientist's search for the ultimate laws of nature; 1993.
9. Penrose R. The road to reality: A complete guide to the laws of the universe; 2004.

Author Biography

Dr. Besud Chu. Erdeni was born in August 16, 1945 to a nomadic family. He completed the study in physics and geophysics from the former Soviet Union. Due to some political reasons he needed to change many professions, though from time to time and was lecturing on unsolved problems of physics to students and general audience. The underlying idea of the superunified field theory comes from his student years. It concerns the problem of the explicit construction of time dimension in geometry and physics. He has a publication on the unsolved problems of the world civilization.

Citation: Erdeni BC. Superunified Field Theory. Trans Eng Comput Sci. 2020;1(1):103.