

Is it time to unify physics and mathematics? - PART II? ***

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Abstract

Physics and mathematics seem like two separate fields, but a deeper look can show that, in fact, they're really just one field and the same.

In a previous article titled is it time to unify physics and mathematics? We have introduced, explained and analyzed seven important and urgent questions and answers showing that physics and applied mathematics are in fact two sides of the same coin, Nature.

Both classical physics and quantum physics as well as applied mathematics belong to the same universal law in physics 1* [2]:

Energy density curvature $U(x,y,z,t) \times$ Space time curvature $C(x,y,z,t) = I_{n,n} \dots (1^*)$

In this article, we apply the same traditional approach using Equation 1*, which has proven successful in combining physics with mathematics.

Note that equation 1* is the toughest equation in physics and applied mathematics, in the sense that any rule or theory that doesn't agree with it must be incomplete or even wrong and needs to be disproved.

At the limit we would say that equation 1* is the only equation describing nature.

Actually, equation 1* was introduced and applied in an innovative way by the author in 2020 [2-13] to describe new physics and new mathematics in a closed control volume bounded by a closed surface under Dirichlet boundary conditions.

Once again, this article is a continuation or an extension of the previous articles,[2-13], based on the golden equation 1*.

The authors describe equation 1* as the golden equation because it solves all physical and mathematical situations just as special cases whatever their origin is.

The current article is just a verification of the above statement, leading to the conclusion that equation 1 deserves its name.*

In the next sections although this article, we follow a similar clear technique of reference 2, where we use Equation 1* to generate new laws and theorems in mathematics, classical physics, and quantum mechanics, and electromagnetic theory, and additionally we define and introduce new paradoxes called Cairo paradox.

Then we agree that this is a solid answer to the question posed in the title of this article:

Yes, it is time to unify physics and mathematics.

Finally, it should be reminded that this article is not meant to diminish the important contributions of great physicists and mathematicians such as A. Einstein, C. Maxwell, E. Schrödinger, N. Bohr, E. Heisenberg, Minkowski, Hilbert, Riemann, among others, but rather to address the most notable gaps and limitations of their theories, when applicable.

Note: If you are not familiar with the universal laws of physics, please stop reading, this article is not intended for you.

I. A comprehensive introduction including theory and numerical results

Physics and mathematics are two sides of the same coin (Nature) and should be unified in the same unitary 4D x-t space-time.

The Lorentz transformation shows us that the invariance of speed of light C requires space and time to be mixed together in a curved Space-time.

The fact described in the statement above motivated the authors to introduce the golden equation 1* into a new unified 4D xt space and claims that physics and mathematics can be unified in its space-time geometry into a single theory or, more precisely, into a single well-defined equation:

Energy Density curvature $U(x,y,z,t) * D^*$ Space-time Curvature $C(x,y,z,t) = I_{n,n} \cdot \dots (1^*)$

Where $I_{n,n}$ is the $n \times n$ unit matrix and n itself is the number of equidistant free nodes in the proposed closed control volume contained inside closed surface area subject to Dirichlet boundary conditions.

Equation 1* itself is completely new never mentioned before and introduced for the first time by the authors since 2020 [2-13]

In reference 1 we find an elegant and thoughtful description of the new proposed method and theorem of the Cairo techniques proposed by the author:

["Ismail Abbas [1] proposes a reformulation of quantum mechanics and physics using Cairo techniques, bounded statistical systems, and novel mathematical frameworks to uncover hidden laws in classical and quantum physics. Overview of Abbas's Approach:

Ismail Abbas, a PhD lecturer at Cairo University, has developed a series of theoretical frameworks aimed at addressing perceived limitations in classical and quantum physics. His work emphasizes that traditional mathematics has been used as a tool in physics but should not be assumed to generate new physical laws; instead, he argues that physics can reveal new mathematics through statistical and unitary approaches.

Key Concepts in Abbas's New Physics
1. Bounded Statistical Systems: Abbas introduces the concept of abounded statistical system, defined as a closed control volume with Dirichlet boundary conditions. This framework is applied to

help resolve paradoxes such as Schrödinger's cat by potentially leading to a unified framework .5. Discovery of Hidden Laws: Abbas claims that thousands of intrinsic laws and rules in physics, mathematics, and biochemistry remain undiscovered. His methods aim to systematically uncover these hidden patterns using statistical and unitary approaches. Implications Abbas's

contributions are primarily theoretical and focus on providing a new mathematical and physical lens to understand quantum phenomena, energy distributions, and the interplay between classical and relativistic physics. His work challenges conventional assumptions and proposes alternative formulations that could refine or extend current models in physics. In summary, Ismail Abbas's "new physics" revolves around bounded statistical systems, Cairo techniques, and reformulated quantum mechanics, aiming to reveal hidden laws and improve the accounting for information loss in open systems

Cairo Techniques: This is a 4D unitary numerical statistical method that Abbas uses to reformulate quantum mechanics. It involves transition chains and B-Transition Matrices to correct incomplete or misleading aspects of the Schrödinger equation, allowing for a more precise description of quantum energy distributions .3.

Reformulation of the Schrödinger Equation: Abbas proposes squaring the Schrödinger PDE to represent the quantum energy density as a real quantity, $\Psi^2 = \Psi \cdot \Psi^*$, which provides a clearer statistical interpretation of quantum states and energy distributions.4. **Integration with General Relativity:** His work also explores merging quantum mechanics with general relativity within bounded volumes, suggesting that electromagnetic and

gravitational fields can be reformulated to align with quantum principles,]

The proposed theory of this Article [2], which will be explained in the next Section II entitled Theory and Numerical Applications, is made up of seven important and pressing questions and answers:

- 1-Is it true that the Cairo transform is superior to both Fourier transform and Laplace transform?**
- 2-What is Energy density diffusion in vacuum and Big Bang.**
- 3- Is it possible for Iran to make a nuclear bomb?**
- 4-Why $E/H = 376$ Ohms in vacuum?**
- 5- What's the Cairo paradox number 1?**
- 6-What's the Cairo paradox number 2?**
- 7-Is it true that science today is in the hands of science deniers?**

In all eight questions above, covering different topics in physics and mathematics, we explain exactly how to build the answer through Nature's cornerstone, which is the statistical transition matrix B , and also how to uncover certain new rules and theorems inherent to physics and mathematics, as well as new paradoxes.

Note that the energy density curvature matrix $U(x,y,z,t)$ in equation 1* is equal to the transfer matrix $D(N)$,

which is in turn expressed in terms of the statistical transition matrix $B(x,y,z,t)$ as [2-20],

$$D(N)=B +B^2+B^3 +.. +B^N \dots (2)$$

Equation 2 shows that the statistical transition matrix B is the cornerstone or the foundation of the new physics and mathematics.

Note also that today we know only two kinds of transition matrices, namely the well-known Markov statistical transition matrix M and the proposed B -transition statistical matrix where the superiority of the latter is evident.

Note also that the W. Heisenberg, Max Born and Pasqual Jordan in 1925 quantum statistical transfer matrix (HMJ theory) is neither transition nor statistical matrix.

We can shed more light and clarity on the nature of the transition matrix B by introducing the so-called transition matrix E , which is expressed as follows,

$$E(N)=B^0+B +B^2+B^3 +.. +B^N \dots (3)$$

Where N is the number of iterations or time steps dt .

It is obvious that $B^0= I$ and $D(N)=E(N)- I$ for all values of integer number N .

Now we can state that the sum of infinite matrix series $E(N)$, $D(N)$ should converge to,

$$E(N) = 1/(I-B) \dots (4)$$

Equation 4 yields,

$$D(N) = 1/(I-B) - I \dots (5)$$

for sufficiently large values of N.

$$\text{Together with } B^N \cdot U(x,y,z,t=0) \dots (6)$$

But we ignore the term $B^N \cdot U(x,y,z, \text{ at } t=0)$ since it tends to zero as N goes to infinity.

Equation 6 implies that for N successive time steps, we end up with,

$$U(x,y,z,Ndt) = D(N) U(x,y,z,t=0) + B^N \cdot (b+S) \dots (7)$$

Notice that B^N tends to zero as N goes to infinity since the norm of B is less than one.

Note also that equation 7 is equivalent to equation 1* which describes and applies to the whole of physics and mathematics.

We recall that the most important equation in physics and mathematics 1* is not just a proposition, since its isotopes (Equations 2-5) have a rigorous definition and derivation, and both have also been successfully applied in all fields of physics and mathematics since 2020 [13,2-12].

The authors predict that the new physics based on and defining the curvature of space-time, Equation 1*,

should exactly describe all of nature (mathematics, classical and quantum physics, as well as probability and statistics) and should therefore meet the following conditions and or the universal laws of physics:

1-Pythagorian theorem.

2-Energy conservation.

3-symmetry and reciprocity.

4-Lorentz transformation.

The four condition above implies that time should be discrete not continuum [14,15].

Moreover, the above four conditions i-iv implies the existence of a transition matrix B controlling the spatial-temporal evolution of the energy density U in the form:

$\mathbf{b}$ and $\mathbf{S}$ are the vector of boundary conditions and the vector of the source term arranged in the right order [2-14].

Note that the statistical transition matrix must meet the above conditions [2-14,15]

The golden equation 1* must be subjected to the Pythagorean theorem, energy conservation, symmetry and reciprocity, Lorentz transformation, and at the same time transmit all of them to curved space-time.

The physical meaning of equation 7 is that the space-time interval $dx dy dz dt$ is conserved under motion AND the boundary conditions vector b cannot be distinguished from the external source term S at any space-time point x,y,z,t .

PROPERTIES OF B-MATRIX

The statistical transition B-matrix in 1D,2D,3D itself is uniquely and well defined inside the closed control volume with Dirichlet boundary conditions (may be called Abbas control volume for distinction) through the following 4 statistical conditions [2-5,6-9,14,15,18,19].

The entries $B_{i,j}$ complies with or are subject to the following 4 statistical conditions for 2 D situations [1-14]:

i- $B_{i,j} = 1/4$ for i adjacent to j .. and $B_{i,j} = 0$ otherwise. This means that the prior probability is equal.

ii- $B_{i,i} = RO$, i.e. the main diagonal is made up of constant inputs RO .

For example, in mathematics and electromagnetism $RO=0$.

In the heat diffusion equation, RO can take any value in the closed interval $[0,1]$ while for Laplace and Poisson PDE, $RO = 0$.

That is to say that B is a null principal diagonal matrix when corresponds to the assumption of a null residue after each time step dt for all over the free nodes.

iii- $B_{i,j} = B_{j,i}$, for all i, j .

The matrix B is double symmetrical to conform to the physical principle of detailed balance and reciprocity.

iv- The sum of $B_{i,j} = 1$ for all the rows far from the borders and the sum $B_{i,j} < 1$ for all the rows connected to the borders meaning that the probability of the whole space = 1.

Obviously and again, the statistical matrix B is very different from the Laplace mathematical matrix A and from the Markov transition matrix M.

The physical nature of B is clear and briefly explained above through conditions I to iv which support hypothesis 3.

The only difficulty or complexity related to determining the B matrix input elements in classical physics and the Q matrix in quantum physics emerge from the process of pre-selecting the main diagonal elements (B_{ii} or RO), since this arbitrary choice is function of the nature of the problem under consideration and its physical characteristics.

However, the main diagonal elements of the transition matrix B can also be well defined depending on the nature of the container's environment, as follows:

For example:

i- $B_{ii} = 0$ for mathematical and electromagnetic problems.

ii- $B_{ii} = 0.2$ and 0.22 for the partial differential equation (PDE) governing heat diffusion in low-carbon Russian alloy steel and high-quality Egyptian aluminum, respectively.

And so on.

Note that, Improved knowledge and understanding of how to construct correct and efficient software algorithms using current programming languages, such as Fortran and C++ are well explained in references [16-20,21,22,25,26,27,30,31,32,32*].

On the other hand, mastery of matrix algebra operations, such as calculating eigenvalues and eigenvectors, as well as matrix multiplication, addition, inversion, and others are well explained in references [16-20,22,28,29,30].

To avoid getting bogged down in the introduction, let's move directly to the second section,

II-Theory and Numerical Applications

In this section of Theory and Numerical Applications we present and explain the following seven intended topics in the form of Q & A.

1-Is it true that the Cairo transform is superior to both Fourier transform and Laplace transform?

2-What is Energy density diffusion in vacuum and Big Bang.

3- Is it possible for Iran to make a nuclear bomb?

4-Why $E/H = 376$ Ohms in vacuum?

5- What's the Cairo paradox number 1?

6-What's the Cairo paradox number 2?

7-Is it true that science today is in the hands of science deniers?

Q1-

Is it true that the Cairo transform is superior to both Fourier transform and Laplace transform?

A!-

It is true that the Cairo transform is efficiently more superior than both Fourier transform and Laplace transform.

The Cairo transform is well defined by 2D transition matrix for 2D boundary conditions problems or 3D transition matrix for 3D boundary conditions problem.

***Point 1.**

The Cairo transform, as described in the proposed framework, offers an interesting matrix-based approach to obtaining time-dependent solutions of boundary-value problems, particularly for partial differential equations (PDEs) which is almost exact and never known before.

we add that the proposed statistical matrix solution framework operates in unitary 4D xyz_t space-time.

We also add that The Cairo transform offers not only an approach for obtaining solutions to boundary-value problems, such as PDEs but also but also generating new theorems and rule in fields of mathematics, classical and quantum physics, and applied mathematics and probability and statistics. This is the case since 2020 which is clear in more than 100 original articles in fields of mathematics, classical and quantum physics, and applied mathematics and probability and statistics.

****Point 2**

The key distinction between Fourier transform techniques and B-transition matrix chains transform lies in how the solution tools is applied or inputted and the outcome result how formulated.

The Fourier transform typically represents the input function in terms of its frequency components, while

the Laplace transform represents it in the complex transform domain, often facilitating the treatment of initial-value problems. Both generally require an inverse transformation or an equivalent reconstruction procedure to recover the solution in the original $xyzt$ domain.

*****Point 3**

On the other hand, the approach described here in the Cairo techniques uses a matrix formulation related to the spatial boundary conditions arranged in the right order and to the domain of free spatiotemporal nodes also arranged in the right order.

For a two-dimensional spatial problem, a matrix representation of the specified boundary data is created; for a three-dimensional spatial problem, the formulation is extended to accommodate the additional spatial dimension. The resulting framework aims to generate the spatio-temporal solution at certain time levels through matrix operations.

Conceptually, the procedure can be represented as follows:

Boundary and initial conditions → Cairo statistical transition B-matrix formulation in space–time → Matrix manipulation and computation → Time-dependent solution at discrete time levels.

This is an appealing feature because it seeks to obtain the evolution of the solution directly, rather than expressing the intermediate result as a frequency spectrum or a complex-domain transform.

******Point 4**

However, we should distinguish between the universality and potential advantages of the proposed new physics method and the claim of universal superiority. To establish that the Cairo transform is more efficient than the Fourier and Laplace transforms, one would need rigorous numerical comparisons involving computational cost, accuracy, stability, convergence, and performance across representative classes of PDEs and boundary conditions. However, The statistical method of Cairo technics is universal and has proven to be a sort of magic in solution corectness, speed of convergence, stability . . etc. Conversely, the rigorous numerical comparisons involving computational cost, accuracy, stability, convergence, and performance across representative classes of PDEs and boundary conditions is out of the main line and should be the readers job rather than delving into business not ours.

Once again and contrary to both Fourier transform and Laplace transform. The output of Cairo

transform is not frequency spectrum but discrete time dependent solution of the concerned problem in discrete time intervals.

Q2-

What about Energy density diffusion in vacuum and Big Bang?

A2-

In fact, the vacuum is not a void in the true sense; rather, it is in reality a substance teeming with energy densities—whether potential or kinetic.

Equation 1* which unifies physics and mathematics for energy density diffusion in vacuum is written as [2-12,24,25],

$$\nabla^2_{xx} \nabla^2_{xy} \nabla^2_{xz} \nabla^2_{xt}]U(x,y,z,t)$$

$$\nabla^2_{yx} \nabla^2_{yy} \nabla^2_{yz} \nabla^2_{yt}]U(x,y,z,t)$$

$$\nabla^2_{zx} \nabla^2_{zy} \nabla^2_{zz} \nabla^2_{zt}]U(x,y,z,t)$$

$$\nabla^2_{tx} \nabla^2_{ty} \nabla^2_{tz} \nabla^2_{tt}]U(x,y,z,t)$$

* D *

$$\nabla^2_{xx} \nabla^2_{xy} \nabla^2_{xz} \nabla^2_{xt}$$

$$\nabla^2_{yx} \nabla^2_{yy} \nabla^2_{yz} \nabla^2_{yt}$$

$$\nabla^2_{zx} \nabla^2_{zy} \nabla^2_{zz} \nabla^2_{zt}$$

$$\nabla^2_{tx} \nabla^2_{ty} \nabla^2_{tz} \nabla^2_{tt}$$

=I

In the case of One dimensional diffusion x axis direction:

$$\nabla^2_{xx} \quad 0 \quad 0 \quad \nabla^2_{xt}]U(x,y,z,t)$$

$$0 \quad 0 \quad 0 \quad 0]U(x,y,z,t)$$

$$0 \quad 0 \quad 0 \quad 0]U(x,y,z,t)$$

$$\nabla^2_{tx} \quad 0 \quad 0 \quad \nabla^2_{tt}]U(x,y,z,t)$$

The solution for energy density U (for example absolute temperature T) is symmetrical, linear, and triangular with its peak at the central point or the center of mass (CM) as shown in Fig. 1 below.

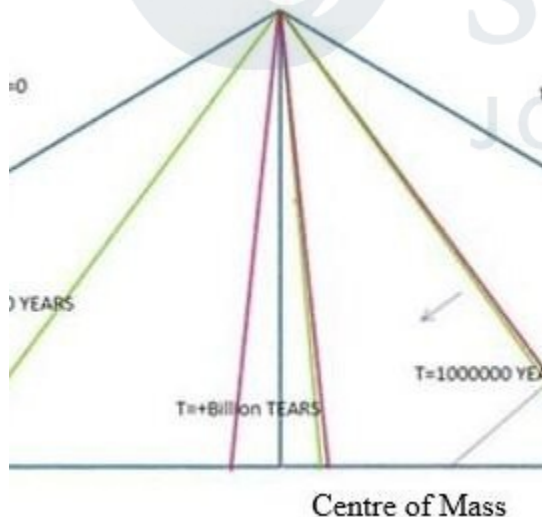


Fig.1.One dimensional energy density distribution (or absolute temperature T) leading to Big Bang millions of years ago [25].

Q3-

3- Is it possible for Iran to make a nuclear bomb?

A3-

The short answer is no neither now nor in the near future.

To explain this answer, we have first to define what is the standard nuclear bomb and what are the current possibilities of Iran in the field of nuclear energy. In other words, what is the size of a standard nuclear bomb?

There exists a critical size, shape and enrichment of nuclear bomb that is essential for sustained chain reaction.

Which is almost standard and similar to that of Hiroshima and Nagasaki of 20,000 tons TNT explosion power as shown in figure 1, below.

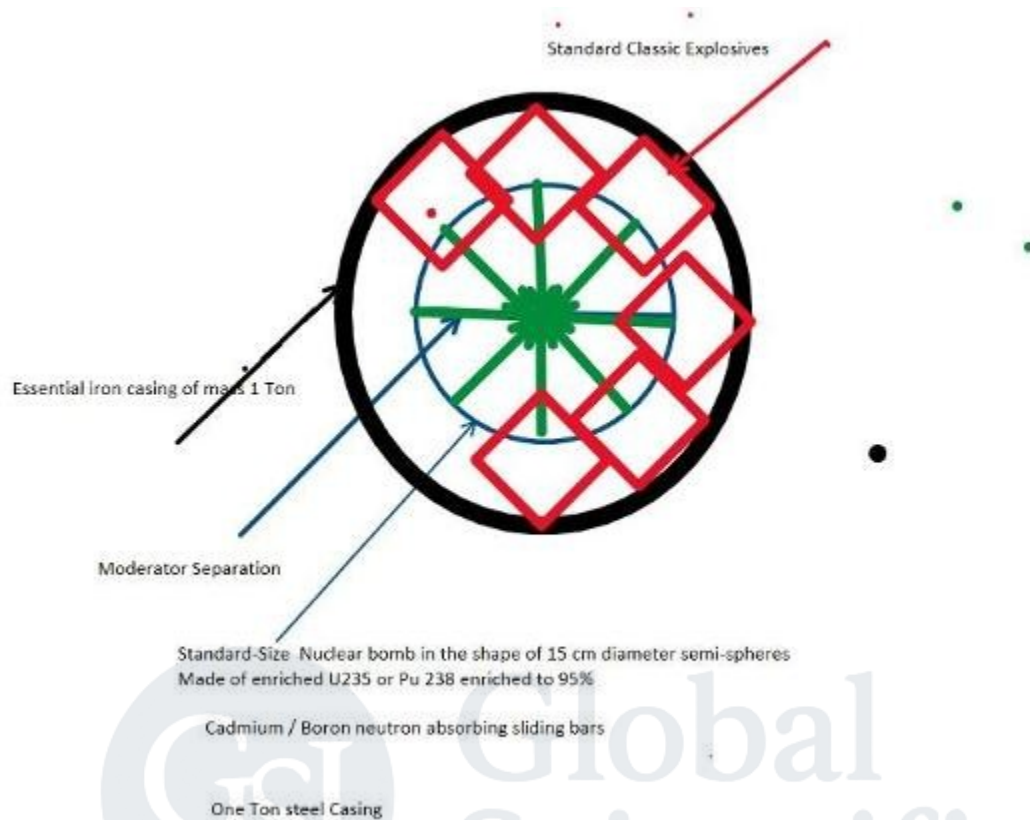


Figure 1.A schematic diagram for standard nuclear bomb of equivalence 20000 ton TNT.

Requirement:

95%U235 or Pu238 enrichment,

Size and shape: 15 cm sphere of weight 15 Kg.

Essential encasement: One ton steel sphere.

The question arises, can we construct nuclear bombs with much lower enriched than 95% of U235 or Pu 238 such as that produced in Iran nuclear plant at level of 20% enrichment?

The answer emerges from the theory of Cairo techniques and its precise calculations.

The theory of Cairo techniques predicts an inversely exponential growth of the critical size and diameter of the nuclear bomb with the enrichment level of U235 or Pu 238.

For example, efficient serial reaction explosion of Iran nuclear bomb under construction of nearly 20% enriched U235 requires more than one meters sphere of U235.

In other words, you need more than one meters sphere of U235 of mass nearly one tons and 15-20 tons of essential thick steel sphere casing for radiation protection during manufacture and storage.

Only Huge trains can transport it.

Our conclusion is that the Iranian nuclear bomb under construction is just some kind of propaganda or even a trap between the US, Germany, and Iran.

This is a bad joke.

Q4-

What are Einstein special and general relativity?

A4-

Einstein special relativity is nothing but Lorentz transformation in one dimension x-t and Einstein general relativity is nothing more than Lorentz transformation in three dimension x,y,z,t which means

that Einstein special relativity can be derived from Einstein general relativity.

However, Einstein failed in deriving special relativity from his general relativity and the two theories remains separate to this day [19,20].

On the other hand, deriving special relativity from general relativity is possible and simple through the application of the golden rule or equation 1* as follows:

$$\nabla^2_{xx} \quad \nabla^2_{xy} \quad \nabla^2_{xz} \quad \nabla^2_{xt} \quad]U(x,y,z,t)$$

$$\nabla^2_{yx} \quad \nabla^2_{yy} \quad \nabla^2_{yz} \quad \nabla^2_{yt} \quad]U(x,y,z,t)$$

$$\nabla^2_{zx} \quad \nabla^2_{zy} \quad \nabla^2_{zz} \quad \nabla^2_{zt} \quad]U(x,y,z,t)$$

$$\nabla^2_{tx} \quad \nabla^2_{ty} \quad \nabla^2_{tz} \quad \nabla^2_{tt} \quad]U(x,y,z,t)$$

WE call it M1

* D *

$$\nabla^2_{xx} \quad 0 \quad 0 \quad \nabla^2_{xt}$$

$$\nabla^2_{yx} \quad \nabla^2_{yy} \quad \nabla^2_{yz} \quad \nabla^2_{yt}$$

$$\nabla^2_{zx} \quad \nabla^2_{zy} \quad \nabla^2_{zz} \quad \nabla^2_{zt}$$

$$\nabla^2_{tx} \quad \nabla^2_{ty} \quad \nabla^2_{tz} \quad \nabla^2_{tt}$$

We call it M2

Note that $M1 * M2 = I \dots (1^*)$

The above matrix equation is GR

On the other hand the special relativity is expressed in matrix notation as,

$$\begin{bmatrix} \nabla^2_{xx} & 0 & 0 & \nabla^2_{xt} \\ 0 & \nabla^2_{yy} & 0 & \nabla^2_{yt} \\ 0 & 0 & \nabla^2_{zz} & \nabla^2_{zt} \\ \nabla^2_{tx} & \nabla^2_{ty} & \nabla^2_{tz} & \nabla^2_{tt} \end{bmatrix} U(x,t)$$

$$0 \quad 0 \quad 0 \quad 0 \quad]U(x,t)$$

$$0 \quad 0 \quad 0 \quad 0 \quad]U(x,t)$$

$$\nabla^2_{tx} \quad 0 \quad 0 \quad \nabla^2_{tt} \quad]U(x,t)$$

We call it M3

* D *

$$\nabla^2_{xx} \quad \nabla^2_{xy} \quad \nabla^2_{xz} \quad \nabla^2_{xt}$$

$$\nabla^2_{yx} \quad \nabla^2_{yy} \quad \nabla^2_{yz} \quad \nabla^2_{yt}$$

$$\nabla^2_{zx} \quad \nabla^2_{zy} \quad \nabla^2_{zz} \quad \nabla^2_{zt}$$

$$\nabla^2_{tx} \quad \nabla^2_{ty} \quad \nabla^2_{tz} \quad \nabla^2_{tt}$$

We call it M4

Note that M3 * M4=I (1**)

The above matrix multiplication M3 .M4 in1** is a subset of previous matrix multiplication M1.M2 in 1*.

M1 M2 is GR.

And,

M3 M4 is SR.

Now, it is clear that the theory of SR is only a subset of theory of GR and that both SR and GR are only one theory not two.

Q5-

Why $E/H = 376$ Ohms in vacuum?

A5-

In reference 1, we find,

From the above definition, and the plane wave solution to Maxwell's equations,

NOTE THAT THE ABOVE DEFINITION IS MISSING!?

,

$$Z(0) = \sqrt{\mu_0 / \epsilon_0}$$

$\mu_0 \approx 12.566 \times 10^{-7}$ H/m known as the permeability of free space,

$$\epsilon_0 \approx 8.854 \times 10^{-12}$$
 F/m

known as the permittivity of free space,

Personally, I didn't understand a bit, DID YOU?

On the other hand a similar proof to that in Q4/A4 can show easily that $(E/H)^2 = (\mu_0 / \epsilon_0) = Z(0)^2$

Q6-

We assume Cairo Paradox 1 is [26]:

[It is true that for any two regular geometrical shapes $V_2/V_1=A_2/A_1$ only if $V_2=V_1$ and $A_2=A_1$]

Provided that both geometric shapes are made of the same material.

A6-

By regular geometric shapes, we mean cubes, pyramids, cones and cylinders, etc. It's clear that hemispheres are included while full spheres are excluded.

We assume that this is true and is one of the miracles of nature,

$V_2/V_1=A_2/A_1$ only if $V_2=V_1$ and $A_2=A_1$ (1)

Provided that the two geometrical shapes are of the same material.

just as the universal golden equation 1*:

Energy density curvature * Space time curvature = I.. . .
(2)

This same question was diffused in ResearchGate 2 or 3 years ago without receiving any correct answer.

Since that time, the authors, among other physicists and mathematicians in the 7 continents, tried hard to find one exception of theorem (1) but they couldn't, Can you?

Q7-

Is it true that science today is in the hands of science deniers?

A7-

It is true that science today is in the hands of science deniers whom we call brain washed and the source of all evil.

One of the most prominent examples is the energy diffusion in vacuum that caused Big Bang resulting in creation of our universe millions of years ago and still creating other universes almost daily.

They still deny the energy diffusion in vacuum and even the Big Bang itself.

We have diffused this Q/A just to show that science today is in the hands of science deniers and more catastrophically is that these brainwashed scientists continue transmitting these fallacies to our younger generation of undergraduate and post graduate students in physics and mathematics.

What are the theoretical and experimental proofs that the magnetic monopole exists?

III-CONCLUSION

The current study shows that the same transition matrix B and equation 1* solve all types of mathematical and physical situations.

Needless to say this is a sort of unifying physics and mathematics.

The authors describe equation 1* as the golden equation because it solves all physical and mathematical problems. We can describe the current article as verification of the above statement through answering with high precision seven relevant questions:

Finally, the authors recall that the proposed article claim mentioned in the title is just a small step on a long road and that sooner or later it will prevail over today's classical science.

It is worth mention to note again that this article does not aim to diminish the significant contributions of great physicists and mathematicians such as A. Einstein, C. Maxwell, E. Schrödinger, N. Bohr, E. Heisenberg, Murkowski, Hilbert, Riemann, among others, but rather to address the most prominent shortcomings and limitations of their theories, where applicable.

NB. If you are not acquainted with universal laws of physics please stop reading, this article is not intended for you.

Note: *In the previous calculations, the author used his own double precision algorithm in Fortran language as explained in ref. 28,29.*

No ready-made algorithms such as Python or MATLAB are required.

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