Global Scientific JOURNALS

How to Merge Quantum mechanics in General Relativity?

1,Ismail Abbas, Sherif Ismail Abbas 2,Nora Abbas 3

February 2026

Abstract

The object of this article is explore the unification of Quantum Mechanics (QM) and General Relativity (GR), proposing that both theories belong to the Lorentzian principle , share more common properties than differences and can be studied within a unified framework.

We analyze the matrix mechanics related to geometry of both theories to emphasize the need for a new framework that can handle the challenges posed by the inherent difficulties of these theories.

Fundamentally, the current definitions of the stress tensor, the curvature tensor in general relativity, and the concept of a quantum system in quantum mechanics are all poorly defined or not defined at all in the true 4D unitary xt space, making their fusion practically impossible.

Therefore, any serious attempt aiming to reconstruct the foundations of a new theory unifying quantum mechanics and general relativity should be based on the appropriate definition of stress strain tensors implying the following revolutionary equation,

Stress tensor x space time curvature tensor = I . . . . . (1)

*Equation 1 is a universal law of physics which is implied by the nature and is **able to solve all classical and quantum physics problems in addition to pure mathematics and statistics.***

Furthermore, equation 1 preserves the arrow of time, a necessary requirement implied by nature entropy in the second law of thermodynamics.

At the extreme, we would say that equation 1 is the only acceptable law in mathematics and physics. In the sense that any mathematical or physical law or rule compatible with equation 1 should be accepted, otherwise it will be refuted.

That is the reason, we use equation 1 to generate Einstein general relativity in one sentence and alternatively we use the same equation 1 to generate the Schrodinger solution of H-atom again in one sentence and consider these two procedures as a unification of general relativity and quantum mechanics.

These striking facts are the subject of this article.

Notice that A.Einstein and E.Schrodinger failed to define time properly and considered it as an external scalar controller which acts independently to the geometrical xyz axix in D^4 space.

Which implies that Both Einstein theory of gravity or general relativity and classical Schrodinger PDE do not agree with equation 1and should be refuted.

Finally, it should be clarified that this article is not intended to minimize the major contributions of great physicists and mathematicians of their time such as Einstein, Schrödinger, Heisenberg, Minkowski, Hilbert, and Riemann, among others, but rather to address the main slips and limitations of their theories, where applicable.

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

I.INTRODUCTION

Mathematics entered physics as a tool but little by little it transformed to be the master.

In the sense that many people believe that mathematics can generate physics when the opposite is true.

The object of this article is explore the possibility of unifying Quantum Mechanics (QM) and General Relativity (GR proposing that both theories belong to the Lorentzian principle (equation 1) , share more common properties than differences and can be studied within a unified framework [2,3,4,5].

When we analyze the matrix mechanics lying behind the geometry of both theories we discover the need for a new framework that can handle the challenges posed by the inherent difficulties of these two theories.

Additionally, the present definitions of the stress and strain or curvature tensors in general relativity, and the concept of a quantum system in quantum mechanics are all poorly defined or not defined at all in the true 4D unitary xt space, making their fusion practically impossible [1,2,3].

Therefore, any serious attempt to rebuild the foundations of a new theory unifying quantum mechanics and general relativity should be based on a breakthrough definition of stress-strain tensors generating the following revolutionary equation:

Stress tensor x space time curvature tensor = I . . . . . (1)

Equation 1 is indeed a universal law of physics following the Big Bang that is imposed by the nature since the Big Bang itself is the source of our physics and mathematics which solve all classical and quantum physics problems in addition to pure mathematics and statistics.

Furthermore, equation 1 preserves the arrow of time, a necessary requirement implied by entropy in the second law of thermodynamics [1,6].

At the extreme, we would say that equation 1 is the only fundamental law in mathematics and physics.

The above statement implies that any law or rule in mathematics or physics compatible with equation 1 must be accepted, otherwise it should be refuted.

It is not easy to verify the possibility of merging quantum mechanics and general relativity, because there is no direct intersection between the two.

However, we can demonstrate or verify the possibility of merging QM and GR when we go through two consecutive steps:

1-We use equation 1 to generate Einstein general relativity just in one sentence.

2- We use the same equation 1 to generate the Schrodinger solution of H-atom in another one sentence and consider these two steps as a unification of general relativity and quantum mechanics.

This striking fact is the subject of this article.

Therefore, we assert that neither A. Einstein nor E. Schrödinger did succeed in properly defining time and considered it as an external scalar controller that acts independently of the geometric xyz axes in D^4 space.

The above fact implies that both Einstein theory of gravity called general relativity and classical Schrodinger PDE do not agree with equation 1and should be refuted.

It is worth mention that Schrodinger PDE should be modified to describe $\Psi^2 = \Psi . \Psi^*$ rather than Ψ itself.

On the other hand, the theory of general relativity is wrongly called the theory of gravity because Einstein made a mistake in assuming that Lorentz's theorem applies exclusively to the gravitational force or, more precisely, to gravitational curvature.

We emphasize once again that time cannot be modeled as an external scalar quantity, as is generally the case in the well-known space R^4, but must be woven or integrated with the three geometric axes xyz while remaining perpendicular to them, which is satisfied by equation 1.

A notable example is the famous method of separation of variables in time-dependent partial differential equations.

In the theory of separation of variables we assume that the separation of variables is established by looking for a solution in the form [1,21,24,25]:

f(x,t) = f1(t) * f2(x) . . . . . (2)

is the most absurd theorem in history.

It is misleading because time must be intertwined with the geometrical axes x, y, z and at the same time kept orthogonal to those axes, not separated as in the case of equation 2 or of R^4 space in general.

The mathematical application of equation 2 literally kills the arrow of time in physical situations.

Finally, in this article, we present and address five urgent and still unanswered questions:

1-How to apply equation 1 to generate Einstein theory of general relativity in one sentence,

2-What is the correct numerical value of the gravitational constant G and, the numerical value of the dark energy temperature (in Kelvin or electron volt) near the surface of the sun?

3- How can equation 1 be applied to generate an accurate solution for the Bohr hydrogen atom without using Bohr's hypothesis E=nhf with n=1,2,3, ... up to infinity?

4- How can equation 1 be applied to obtain the famous Boltzmann normal distribution?

5- How to apply equation 1 to find the solution of n simultaneous linear algebraic equations?

In order not to worry too much about the details of the introduction let us go directly to section II the theory.

II-Theory and Numerical results

In this section, we explain in more detail the theory and applications of each element of the five introgations mentioned in the introduction, through a series of five questions and answers covering many gaps in physics and mathematics.

Q1

Assuming that the Lorentzian theorem in unitary 4D xyzt space, namely,

Stress tensor S x Curvature tensor C = I . . . . (1)

Is the only law of physics which is in a way the theory of everything that applies well classical and quantum physics then how the stress and strain tensors are consistently and uniquely defined for a field of energy density U(x,y,z,t) in the 4D unitary xyzt space?

A1

The first breakthrough here is to extend the Cauchy Riemann stress tensor to the 4Dunitary xyzt space where this extension is logically assumed as,

Fxx Fxy Fxz Fxt

Fyx Fyy Fyz Fyt

Fzx Fzy Fzz Fzt

Ftx Fty Ftz Ftt

The second breakthrough is to express the above Stress tensor in terms of Laplacian ∇^2 as follows,

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

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

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

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

We call the above stress tensor or matrix M1.

Note that transition matrix summation $B+B^2+B^3+...$for finite number of iterations or time jumbs N is a tensor whereas for N tends to infinity it turns into matrix.

The third breakthrough is to assume that the multiplication of the tensors involved in Equation 1 below is indeed the same as the generalization of the universal law called Cauchy-Riemann tensor in 4D unit space xyzt.

M1 * M2 =I . . . . . (3)

Where M2 is the strain or curvature tensor.

The forth breakthrough here is that we should properly define and express the curvature tensor M2 in terms of ∇^2 as follows,

M2=

$\nabla 2xx\ \nabla 2xy\ \nabla 2xz\ \nabla 2xt$

$\nabla 2yx\ \nabla 2yy\ \nabla 2yz\ \nabla 2yt$

$\nabla 2zx\ \nabla 2zy\ \nabla 2zz\ \nabla 2zt$

$\nabla 2tx\ \nabla 2ty\ \nabla 2tz\ \nabla 2tt$

Now, the multiplication M1 * M2 in equation 1

gives the correct expression for general relativity equation in matrix form.

The Lorentzian theorem in unitary 4D xyzt space, namely,

$M1 * M2 = I$ . . . . . (3)

generates the Einstein GR in one sentence.

Note that The physical meaning of equation 3 is that the 4D unitary xyzt space is preserved or conserved under motion.

Furthermore, it can be applied to solve the numerical value of dark energy in electron volts or in Kelvin.

Note again that Equation 3 is the theory of GR by itself.

Note also that the curvature C is proportional to the energy density U in any case, and not necessarily to the gravitational energy density as Einstein's hypothesis suggested.

Also note that the previous analysis suggests that the locus of gravitational energy density is in the vacuum near the surface of the sun, which accounts for 99% of the mass and gravity of the solar system.

Assuming that the graviton is responsible for transmitting gravity force it should be found in the far space near the sun not on earth.

Calculating gravitation

The numerical vales in cosmic tables pesents the following:

Universal gravitational constants:

G=6.7E-11 MKS, Mass of the sun Ms=2. E30 Kg and Rs radius of the sun=7E8 m.

The experimentally measured result for the curvature of spacetime near the surface of the Sun, C, is C = E-2 m^-1 near the surface of the Sun.

This is almost the same numerical value for spacetime curvature C near the sun surface obtained theoretically by Cairo techniques and

by Einstein in his general relativity and is in fact the reason behind Einstein far reaching success in his general relativity.

The question arises:

assuming that the numerical value of C obtained by Einstein has been confirmed by cosmic measurements, do we need other cosmic measurements to confirm the same C obtained by the techniques from Cairo [17,18,19,20]?

The answer is NO.

Q2

What is the numerical value of the gravitational constant G and the numerical value of the dark energy temperature in Kelvin or electron volt?

A2

The theory of Cairo techniques shows that:

U(x,y,z,t tends to infinite) = D * (b+S) . . . .. (4)

B is the Dirichlet boundary conditions which is the amount of dark energy in free space near the surface of the sun.

Equation 2 shows that the spacetime curvature near the surface of the sun is composed of two components [2,3,44,5,6]:

C=C1+C2 . . . . . (5)

Where C1 results from equation 1 and C2 is the value of the dark energy on the boundary surface of the sun.

The value of gravitational constant G in equation 1,4,5 can be arbitrary which means any chosen value for G satisfies the equations since C1 is complimented by C2.

Two unknowns and a specifying equation.

Einstein assumed that the gravitational constant G was equal to zero, which is neither wise nor acceptable, but we assume that G is approximately 6.6743 × 10−11 m³•kg−1•s−2 in accordance with experimental measurements on Earth [1,6].

The result of the above choice is that the spacetime curvature is equally divided between C1 and C2 as 1E-2 each and both specify the value of the dark energy on the boundary surface of the sun of 3 ev.

The claim of incompleteness and incorrectness of Einstein GR and SR despite it was proved by GPS measurements is supported by counterwise questions [1,3,4,5,24,25]:

Counter-question i

Why Einstein failed to derive SR from GR simply by equating acceleration to zero?

 Answer i

SR and GR remain two distinct theories up to this day.

Counter-question ii

 Did Einstein ever got a scientific prize for his GR or SR?

 Answer ii

 The answer is no but on the opposite he was met by opposition explained in the article 100 authors against Einstein.

Note that Einstein awarded Nobel Prize in 1916 for his contribution equation in photoelectric effect, $hf = W + 1/2\ m\ v^2$ maximum.

Counter-question iii

 Did Einstein ever succeed in defining time t?

Answer iii

On the contrary Einstein never succeeded in finding rigorous definition of time and stated once that time is an illusion [1,23,24,25].

The result is that all of Einstein's equations are limited in time to explain only the current stationary state and never predict the future or what will happen tomorrow.

Unlike the golden rule where time is irreversible.

Q3

Can the same Lorentzian theorem in unitary 4D xyzt space, namely,

M1 * M2 =I . . . . . (1)

Be applied to solve the energy density of a quantum system in the general case?

A3

The brief answer is yes.

Fig.1.Bohr classical model for H-atom

The statistical theory of Cairo techniques proposes the following powerful quantum transfer matrix D [16,17,18,19,20]:

D 19x19=

247/400 9/16 -9/50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

1/2 1/25 3/5 -7/50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

-7/50 21/40 53/200 91/200 -21/200 0 0 0 0 0 0 0 0 0 0 0 0 0 0

0 -21/200 39/100 23/50 33/100 -3/40 0 0 0 0 0 0 0 0 0 0 0 0 0

0 0 -3/40 11/40 5/8 9/40 -1/20 0 0 0 0 0 0 0 0 0 0 0 0

0 0 0 -1/20 9/50 19/25 7/50 -3/100 0 0 0 0 0 0 0 0 0 0 0

0 0 0 0 -3/100 21/200 173/200 3/40 -3/200 0 0 0 0 0 0 0 0 0 0

0 0 0 0 0 -3/200 1/20 47/50 3/100 -1/200 0 0 0 0 0 0 0 0 0

0 0 0 0 0 0 -1/200 3/200 197/200 1/200 0 0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0 1/200 197/200 3/200 -1/200 0 0 0 0 0

0 0 0 0 0 0 0 0 -1/200 3/100 47/50 1/20 -3/200 0 0 0 0

0 0 0 0 0 0 0 0 0 -3/200 3/40 173/200 21/200 -3/100 0 0 0 0

0 0 0 0 0 0 0 0 0 0 -3/100 7/50 19/25 9/50 -1/20 0 0 0

0 0 0 0 0 0 0 0 0 0 0 -1/20 9/40 5/8 11/40 -3/40 0 0

0 0 0 0 0 0 0 0 0 0 0 0 -3/40 33/100 23/50 39/100 -21/200 0

0 0 0 0 0 0 0 0 0 0 0 0 0 -21/200 91/200 53/200 21/40 -7/50

0 0 0 0 0 0 0 0 0 0 0 0 0 0 -7/50 3/5 1/25 1/2

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -9/50 9/16 247/400

Note that,

D^2=D and hence Q^2=Q which is property of quantum eigen matrix.

This type of matrices A=A^2 is called in physics idle matrix and in mathematical terms,

an idempotent matrix has eigenvalues ev of 0 or 1 which satisfy the golden rule ev = ev^2 [2,4,5,18,19,23].

Therefore the stationary energy levels Of Bohr H-atom or solution vector b of matrix D19x19 is obtained by multiplying the matrix D 19x19 above by the vector 13.6 ev/n^2 shown in Fig,1.

The numerical results obtained is as follows

b*= (-0.1403 ,- 0.163, -0.2121, -0.2769 , -0.377, -0.5404 ,-3.435 , - 13.6 ev . . . etc) T

This stationary distribution is sometimes called quantum particle in a central field.

the vector b above is the eigen vectors of the transfer matrix D with eigen value ev=1 only if

Q.b*= b.

The numerical result of matrix multiplication above is b*=,

[-877/6250 -163/1000 -10607/50000 -13843/50000 -377/1000 - 54041/100000 -167633/200000 -74419/50000 -687089/200000 - 68/5 -687089/200000 -74419/50000 -167633/200000 - 54041/100000 -377/1000 -13843/50000 -10607/50000 -163/1000 - 877/6250]T

The above values correspond almost exatly to the values obtained by N. Bohr in Figure 1.

In otherwords it is is almost exact that b*=b.

Note also that Q^2=Q which is property of idle quantum eigen matrix.

Q4

How can equation 1 be applied to obtain the famous Boltzmann normal distribution?

A4

The Numerical derivation of Normal/Gaussian

distribution formulas via the chains of the matrix B is well

explained in reference 13 so we content ourselves here with

presenting the significant result.

 If we use the closed B matrix (Bc) 15X15, we arrive at

the following distribution explained in ref.[3,4,5,6,13],

0.0000000

0.0000000

9.765625E-4

9.7656250E-3

4.3945313E-2

0 .11718750

0.20507813

0.246093750

0.20507813

0 .11718750

4.3945313E-2

9.7656250E-3

9.765625E-4

0.000000

0.000000

Q5

How to apply equation 1 to find the solution of n simultaneous linear algebraic equations?

A5

The transition matrix B for a 2D square with 9 equidistant nodes, shown in Figure 2/4, is given by [22,23,24,25],
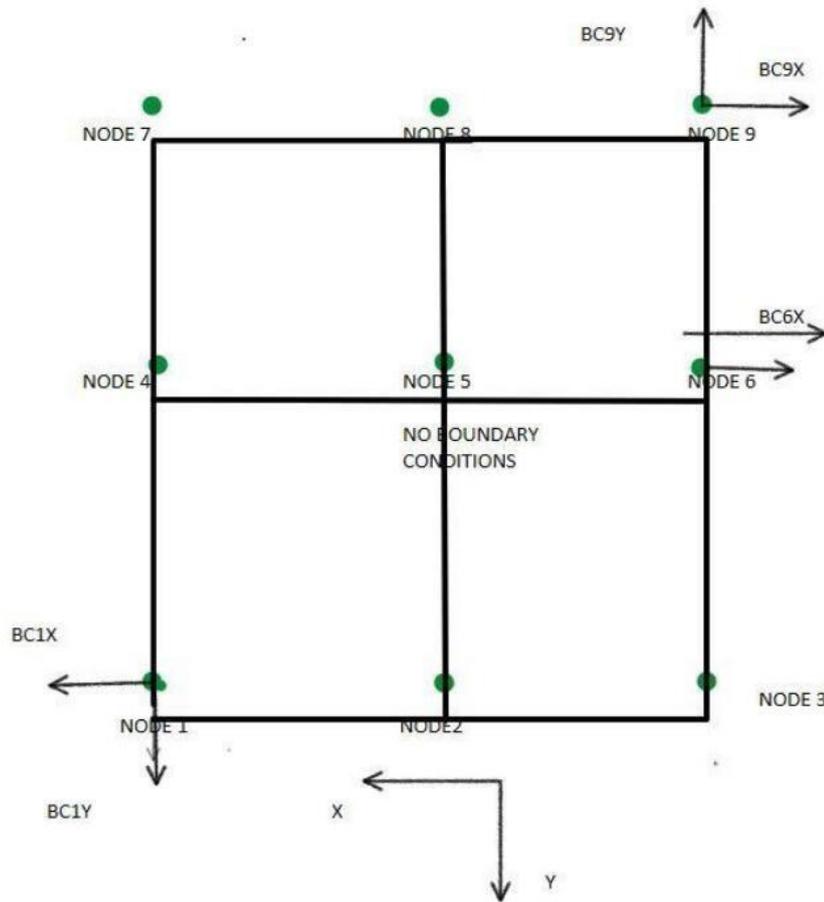
Fig.4. A 2D square discretized in 9 equally spaced free nodes subject to Dirichlet BC in general case.

B9x9=

0 1/4 0 1/4 0 0 0 0 01/4 0 1/4 0 1/4 0 0 0 00 1/4 0 1/4 0 1/4 0 0 01/4 0 0 0 1/4 0 0 1/4 00 1/4 0 1/4 0 1/4 0 1/4 00 0 1/4 0 1/4 0 0 0 1/40 0 1/4 0 0 0 0 1/4 00 0 0 0 1/4 0 1/4 0 1/40 0 0 0 0 1/4 0 1/4 0

The E transfer matrix is given by,

E=1/(I-B)E

551/457 188/457 68/457 188/457133/457 60/457 24/457 96/457 39/4573/7 19/14 3/7 5/14 4/7 2/71/14 2/7 1/7772/3199 1544/3199 4020/3199 1544/31991384/3199 1504/3199 236/3199 944/3199612/31991261/3199 1845/6398 533/3199 8243/63981896/3199 766/3199 887/6398 1774/3199635/3199855/3199 1710/3199 988/3199 1710/31994997/3199 1732/3199 510/3199 2040/3199943/3199456/3199 912/3199 1380/3199 912/31991812/3199 4336/3199 272/3199 1088/31991356/3199276/3199 552/3199 1172/3199 552/3199760/3199 604/3199 3532/3199 1332/3199484/3199

332/3199 664/3199 668/3199 664/31991656/3199 912/3199 1096/3199 4384/31991324/3199197/3199 394/3199 512/3199 394/3199867/3199 1312/3199 342/3199 1368/31993869/3199

Step 2

The D transfer matrix is obtained via the relation,

D=E-I

Therefore, D9x9= . . . etc

The D matrix is the required solution of any 9simultaneous linear algebraic equation system expressed as,

a11.x1 +a12 .x2 +a13 . x3 + . . . +a19 .x9 =b1

a21.x1 +a22 .x2 +a23 . x3 + . . . +a29 .x9 =b2

. . . .

a91.x1 +a92 .x2 +a93 . x3 + . . . +a99 .x9 =b9

Surprisingly, multiplying the matrix Dnxn by the vector **b** yields the desired solution [x1,x2,...x9] without resorting to classical methods such as matrix inversion, triangulation, iteration techniques, etc

III-CONCLUSION

Nature is statistically symmetric and bounded (1).

Moreover Nature obeys the golden rule of time irreversibility as implied by the second law of thermodynamics.

Every physical or mathematical problem has a natural statiscal solution that works in appropriate bounded control volume which is in itself the theory of Cairo techniques.

The closed control volume CV contained in closed area A subject to to thr Dirichlet boundary conditions is a part of the statistical theory of Cairo techniques.

In this article we answered 5 important and urgent questions:

1-How to apply equation 1 to genrarate Einstein theory of general relativity in one sentence,

2-What is the numerical value of the gravitational constant G and , the numerical value of the dark energy temperature in Kelvin or electron volt?

3- How can equation 1 be applied to generate an accurate solution for the Bohr hydrogen atom without using Bohr's hypothesis E=nhf with n=1,2,3, ... up to infinity?

4- How can equation 1 be applied to obtain the famous Boltzmann normal distribution?

5- How to apply equation 1 to find the solution of n simultaneous linear algebraic equations?

The numerical solution results are stable and accurate.

Finally, it should be clarified again that this article is not intended to minimize the major contributions of greatests physicists and mathematicians of their time such as Einstein, Schrödinger, Heisenberg, Minkowski, Hilbert, and Riemann, among others, but rather to address the main slips and limitations of their theories, where applicable.

NB. The author uses his own double precision algorithm in Fortran language, such as that of references 31,32,33,34.

No ready-to-use Python or MATLAB algorithms are needed.

References

1-Google and Wikipedia search.

2-I.Abbas et al , How to generate new mathematics-Part I, ResearchGate, GSJ Journals, 2025.

3-I.Abbas et al , How to generate new mathematics-Part II, ResearchGate, GSJ Journals, 2025.

4-I.Abbas et al , How to generate new mathematics-Part III, ResearchGate, GSJ Journals, Feb 2026.

5-I.Abbas et al , How to generate new mathematics-Part IV, ResearchGate, Feb, 2026.

6-I. Abbas et al., How to Merge Quantum Mechanics and General Relativity, ResearchGate, February 2026.

2-I.Abbas,101 Authors Against Einstein, ResearchGate, IJISRTreview,2025.GSJ: Volume 13, Issue 12, December 2025ISSN 2320-91861484GSJ©2025www.globalscientificjournal.com

3-(PDF) How to generate new mathematics.Availablefrom:https://www.researchgate.net/publication/396709026_(PDF)Using matrix algebra, how to show that the infinite powerseries [(1+2x)/3]^Nis equal to (1+2 x)/(2-2 x), ∀x∈[0,1[. Availablefrom:https://www.researchgate.net/publication/397658317_

8-The Theory of Everything,October 2025 Quality Engineering GSJ: Volume13, Issue 9,September 2025,(GSJ: Volume 13, Issue 9, September 2025)Lab:Ismail Abbas's LabIsmail Abbas Ismail Abbas M. Abbas Ismail Abbas M. Abbas

10-I.Abbas et al,101 Authors Against Einstein: Universal laws ofphysics,ResearchGate, 2025.GSJ: Volume 13, Issue 12, December 2025ISSN 2320-91861485GSJ© 2025www.globalscientificjournal.com

11-ResearchGate Q/A, novembre 2025 – February 2026.

12-I.Abbas, Using matrix algebra, how to show that theinfinite power series [(1+2x)/3]^N is equal to (1+2 x)/(2-2x),∀x∈[0,1[,ResearchGate, November 2020.

13-I.Abbas, What is Missing in Mathematics,

IJISRT- Theoretical Physics , Volume 8, Issue 3, March – 2023

14-I. Abbas, A numerical statistical solution for Laplace and Poisson PDE,ResearchGate, International Journal of Innovative Science and ResearchTechnology, October2020.

15-I.Abbas, Fundamentals of Artificial Intelligence, Book, Amazon.

16-I. Abbas, Quantum Puzzle, Vacuum Dynamics and the BigBang, Volume 9,Issue 6, June 2024, International Journal ofInnovative Science and ResearchTechnology, ISSN: 2456-2165,https://doi.org/10.38124/ijisrt/IJISRT24ijisrt.com, 2185.

17-I. Abbas et al, The Theory of Everything October 2025, Quality EngineeringGSJ: Volume 13, Issue 9, September 2025,(GSJ: Volume 13, Issue 9,September 2025)

18-I.Abbas et al, Is Time Continuous or Discrete?December 2025, International Journal of Innovative Science and ResearchTechnologyDOI: 10.38124/ijisrt/25dec699

19- 1. Abbas, How to transform B matrix chains into Markovchains and viceversa, ResearchGate, IJISRT journal, 2023.

20-I.Abbas, Fall and Rise of matrix mechanics, Volume 9, Issue1, January2024, International Journal of Innovative Science and Research Technology,ISSN No:-2456-2165IJISRT24JAN569 www.ijisrt.com 57.

21-Professor Stefka Gueorguieva, Professor of Mathematics and Computer Science, University of Bordeaux, France, personal communication.

22- I,Abbas,IJISRT,ResearchGate, How to generate new mathematics, October 2025

Lab: Ismail Abbas's Lab

23- J. Mathews, Numerical Methods for mathematics, scienceandEngineering, Book 1995.

24-L. Landau, Theoretical physics, Translated from Russian,Pergman press,Australia,.

25- I. Abbas et al, The Theory of EverythingGSJ: Volume 13, Issue 12,December 2025ISSN 2320-91861486GSJ©2025www.globalscientificjournal.comOctober 2025Quality Engineering GSJ: Volume 13, Issue 9,September 2025,(GSJ: Volume 13, Issue 9, September 2025)

26- I. Abbas, A rigorous reform of mathematics and physics, ResesearchGate,January 202521- and Information Theory, RG, Q/A 2025.

27-I. Abbas, Theory and design of audio rooms-Reformulation of the Sabineformula, ResearchGate, IJISRT review, October 2021.

28-I.Abbas, ,Theory and design of audio rooms –Physical formulation, ResearchGate, International Journal of InnovativeScience and ResearchTechnology, June 2024, August 2024

29-I . Abbas, A numerical statistical solution for Laplace and Poisson partial differential equations, ResearchGate, International IJISRT: Volume 13, Issue 12,December 2025ISSN 2320-91861487GSJ©2025www.globalscientificjournal.com

30-I.Abbas, A Rigorous Reformulation of Einstein derivation of the special relativity, IJISRT,DOI: https://doi.org/10.5281/zenodo.6324421,Feb 1922.

31- I. Abbas, A rigorous reform of mathematics and physics, ResearchGate, International Journal of Innovative Science and

Research, Jan 2025,March2025International Journal of Innovative Science andResearch TechnologyDOI:10.38124/ijisrt/25mar506Lab: Ismail Abbas's Lab

32- I.Abbas, BOOK, Foundations of Artificial Intelligence, Theory and Practice.GSJ: Volume 13, Issue 12, December 2025ISSN 2320-91861488GSJ©2025www.globalscientificjournal.com

33-I.M. Abbas et al, A critical analysis of the propagationmechanisms ofionizing waves in the event of a breakdown, IAbbas, P Bayle, Journal ofPhysics D:Applied Physics13 (6),8-

34-I.M. Abbas et al, IEEE.1996, Pseudo spark discharge, Plasma Science Transactions 24(3):1106 -1119,DOI:10.11