بسم الله الرحمن الرحيم

The Quantum-Relativistic Universe and Traveling across Time

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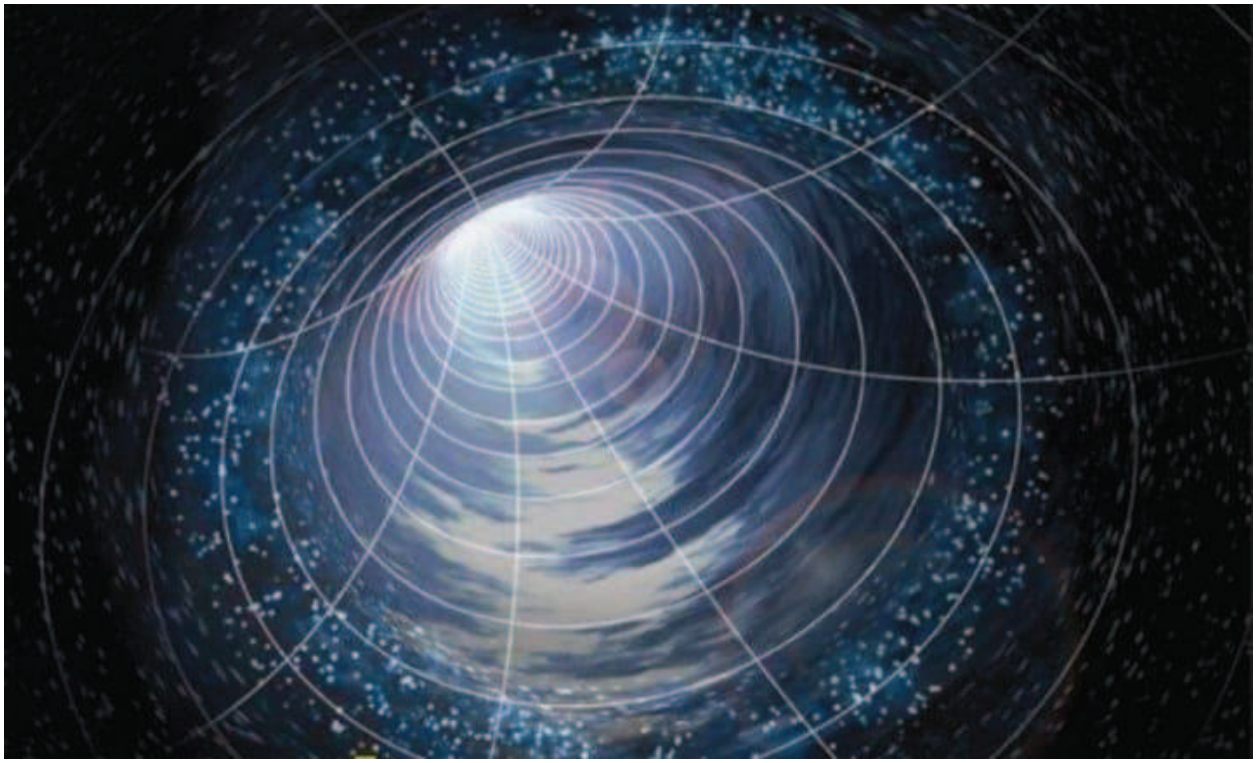
Abstract

In this paper I discussed some fascinating ideas like time travel and a new world containing just two dimensions and the new vision for the inflation. Also I tried to interpret some Tesla's works about listening to the outer space and communication with intelligent life over there. I also would like to inform that the origination of these idea is the Holy Qur'an.



بسم الله الرحمن الرحيم

وَلَوْ فَتَحْنَا عَلَيْهِمْ بَابًا مِنَ السَّمَاءِ فَظَلُّوا فِيهِ يَعْرُجُونَ لَقَالُوا إِنَّمَا سُكِّرَتْ أَبْصَارُنَا بَلْ نَحْنُ قَوْمٌ مَسْحُورُونَ

قَالَ يَا أَيُّهَا الْمَلَأُ أَيُّكُمْ يَأْتِينِي بِعَرْشِهَا قَبْلَ أَن يَأْتُونِي مُسْلِمِينَ(38) قَالَ
عِفْرِيتٌ مِّنَ الْجِنِّ أَنَا آتِيكَ بِهِ قَبْلَ أَن تَقُومَ مِن مَّقَامِكَ ۖ وَإِنِّي عَلَيْهِ
لَقَوِيٌّ أَمِينٌ(39) قَالَ ٱلَّذِى عِندَهُۥ عِلْمٌ مِّنَ ٱلْكِتَـٰبِ أَنَا۠ ءَاتِيكَ بِهِۦ
قَبْلَ أَن يَرْتَدَّ إِلَيْكَ طَرْفُكَ ۚ فَلَمَّا رَءَاهُ مُسْتَقِرًّا عِندَهُۥ قَالَ هَـٰذَا مِن
فَضْلِ رَبِّى لِيَبْلُوَنِىٓ ءَأَشْكُرُ أَمْ أَكْفُرُ ۖ وَمَن شَكَرَ فَإِنَّمَا يَشْكُرُ لِنَفْسِهِۦ ۖ
وَمَن كَفَرَ فَإِنَّ رَبِّى غَنِىٌّ كَرِيمٌ (40)

سَنُرِيهِمْ آيَاتِنَا فِي الْآفَاقِ وَفِي أَنفُسِهِمْ حَتَّىٰ
يَتَبَيَّنَ لَهُمْ أَنَّهُ الْحَقُّ ۗ أَوَلَمْ يَكْفِ بِرَبِّكَ أَنَّهُ
عَلَىٰ كُلِّ شَيْءٍ شَهِيدٌ

صدق الله العظيم

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Chapter one

Abstract:

The 1970s were a heady time in particle physics. New accelerators in the United States and Europe turned up unexpected particles that theorists tried to explain, and theorists in turn predicted new particles for experiments to hunt. The result was the Standard Model of particles and interactions, a theory that is essentially a catalog of the fundamental bits of matter and the forces governing them.

While that Standard Model is a very good description of the subatomic world, some important aspects—such as particle masses—come out of experiments rather than theory.

“If you write down the Standard Model, quite frankly it's a mess,” says John Ellis, a particle physicist at King’s College London. “You've got a whole bunch of parameters, and they all look arbitrary. You can't convince me that's the final theory!”

The hunt was on to create a grand unified theory, or GUT, that would elegantly explain how the universe works by linking three of the four known forces together. Physicists first linked the electromagnetic force, which dictates the structure of atoms and the behavior of light, and the weak nuclear force, which underlies how particles decay.

But they didn’t want to stop there. Scientists began working to link this electroweak theory with the strong force, which binds quarks together into things like the protons and neutrons in our atoms. (The fourth force that we know, gravity, doesn’t have a complete working quantum theory, so it's relegated to the realm of Theories of Everything, or ToEs.)

Linking the different forces into a single theory isn’t easy, since each behaves a different way. Electromagnetism is long-ranged, the weak force is short-ranged, and the strong force is weak in high-energy environments such as the early universe and strong where energy is low. To unify these three forces, scientists have to explain how they can be aspects of a single thing and yet manifest in radically different ways in the real world.

The electroweak theory unified the electromagnetic and weak forces by proposing they were aspects of a single interaction that is present only at very high energies, as in a particle accelerator or the very early universe. Above a certain threshold known as the electroweak scale, there is no difference between the two forces, but that unity is broken when the energy drops below a certain point

The unified of gravity to the other three force is not stander model origin but other model in which the dimensions are not four but more than four embedded into two. This model is some

kind strange but check out this; super symmetry could joined the three forces in four dimensions but missed the gravity because it is so weak, the weakness of this force coming from the missed dimension which is the fifth as pointed by String Theory. In this book and my researches that by mixing Kruskal's manipulations about resolving the field equation of the General Relativity with stander model I reached to very promising idea about another view for unified these two theories. The idea of two general dimensions it is not an intuition deduction but it is physical postulations and mathematical derivation and finally comparison with the experiments [1].

This book as a letter to all world about a new theory in physics, a new grand theory that mixing General Relativity with the standard model.

In this book I discussed some fascinating ideas like time traveling and a new world contain just two dimensions then the new vision for the inflation. Also I tried to interpret some Tesla's works about listening to the outer space and communication with intelligent life over there.

In addition to that I would like to inform that the origination of these idea is the Holy Qur'an and the travelling of prophet Mohamed, God peace and bless upon him, and ascending to meet our God, so the prophet gave us again a gift to all humanity and confirming again that his was sent as a grace to all mankind.

I hope this book give a real addition to our understanding about the behavior of universe.

Ali Yousif Hassan Edriss.

[1] https://www.symmetrymagazine.org/article/a-gut-feeling-about-physics

Introduction:

General relativity is a theory of gravitation developed by Albert Einstein between 1907 and 1915. The theory of general relativity says that the observed gravitational effect between masses results from their warping of spacetime.

By the beginning of the 20th century, Newton's law of universal gravitation had been accepted for more than two hundred years as a valid description of the gravitational force between masses. In Newton's model, gravity is the result of an attractive force between massive objects. Although even Newton was troubled by the unknown nature of that force, the basic framework was extremely successful at describing motion.

Experiments and observations show that Einstein's description of gravitation accounts for several effects that are unexplained by Newton's law, such as minute anomalies in the orbits of Mercury and other planets. General relativity also predicts novel effects of gravity, such as gravitational waves, gravitational lensing and an effect of gravity on time known as gravitational time dilation. Many of these predictions have been confirmed by experiment or observation, most recently gravitational waves.

General relativity has developed into an essential tool in modern astrophysics. It provides the foundation for the current understanding of black holes, regions of space where the gravitational effect is strong enough that even light cannot escape. Their strong gravity is thought to be responsible for the intense radiation emitted by certain types of astronomical objects (such as active galactic nuclei or microquasars). General relativity is also part of the framework of the standard Big Bang model of cosmology[2].

Schwarzschild metric as a solution for general relativity:

As Einstein's equations are non-linear, the difficult part is to obtain a solution. Once we think we found one, we can simply plug it into the equations to verify it. Fortunately, Schwarzschild did the hard work by finding a solution. In fact, there is a theorem, known as Birkhoff 's theorem that states that the Schwarzschild solution is the unique spherically symmetric solution to Einstein's equations in vacuum, which describes spherically symmetric vacuum spacetimes[3] and gravitational field outside a spherical mass, on the assumption that the electric charge of the mass, angular momentum of the mass, and universal cosmological constant are all zero.

The solution is a useful approximation for describing slowly rotating astronomical objects such as many stars and planets, including Earth and the Sun.

[2] Wikipedia.

[3] Schwarzschild Solution and Black Holes , Asaf Pe'er (February 19, 2014)

A Schwarzschild solution gave off black hole or static black hole is a black hole that has neither electric charge nor angular momentum. A Schwarzschild black hole is described by the Schwarzschild metric, and cannot be distinguished from any other Schwarzschild black hole except by its mass.

The Schwarzschild black hole is characterized by a surrounding spherical boundary, called the event horizon, which is situated at the Schwarzschild radius, often called the radius of a black hole. The boundary is not a physical surface, and if a person fell through the event horizon (before being torn apart by tidal forces), they would not notice any physical surface at that position; it is a mathematical surface which is significant in determining the black hole's properties. Any non-rotating and non-charged mass that is smaller than its Schwarzschild radius forms a black hole. The solution of the Einstein field equations is valid for any mass *M*, so in principle (according to general relativity theory) a Schwarzschild black hole of any mass could exist if conditions became sufficiently favorable to allow for its formation.

Schwarzschild black hole gave off two singularities which are some of space that the equation is bad behaved at. Some of these singularities is logically understood and the other is not so many scientists tried to get out of this riddle, one of the is Kruskal ,for more details about Schwarzschild solution see my books[4].

Kruskal coordinates:

What is Kruskal–Szekeres coordinates?

The Schwarzschild metric has a singularity when the radius of black hole reach zero, however, the falling observer acknowledges a smooth motion without any peculiarity when he passes the horizon. This suggests that the behavior at the Schwarzschild radius is only a coordinate singularity which can be removed by using another more appropriate coordinate system.

Kruskal–Szekeres coordinates, named after Martin Kruskal and George Szekeres, are a coordinate system for the Schwarzschild geometry for a black hole. These coordinates have the advantage that they cover the entire spacetime manifold of the maximally extended Schwarzschild solution and are well-behaved everywhere outside the physical singularity.

Kruskal coordinates are mathematical manipulation to understand the unreal singularity so it is not real so far but after this book it will become real and will play a vital role to improve the ideas about the behavior the universe.

The Kruskal coordinates takes the following expression:

$$ds^2 = -\frac{32}{r}\left(\frac{GM}{c^2}\right)^3 e^{-\left(\frac{c^2 r}{2GM}\right)}(-dV^2 + dU^2) + r^2(d\theta^2 + \sin^2\theta\, d\emptyset^2)$$

[4] See my books on references list beginning from 1.

This expression contains some kind of mixing quantum characteristics and general relativistic manner. So in this section we will derivate something new by mixing it with Newtonian force, let us begin.

Beginning with this equation which describes space coordinates around black hole[5]:

$$ds^2 = -\frac{32}{r}\left(\frac{GM}{c^2}\right)^3 e^{-\left(\frac{c^2 r}{2GM}\right)}(-dV^2 + dU^2) + r^2(d\theta^2 + \sin^2\theta\, d\emptyset^2)$$

Suppose the light move radially, then the equation becomes:

$$ds^2 = -\frac{32}{r}\left(\frac{GM}{c^2}\right)^3 e^{-\left(\frac{c^2 r}{2GM}\right)}(-dV^2 + dU^2)$$

Then, by remove the square root:

$$ds = i\left(\frac{32}{r}\left(\frac{GM}{c^2}\right)^3 e^{-\left(\frac{c^2 r}{2GM}\right)}(dU^2 - dV^2)\right)^{\frac{1}{2}}$$

Or approximately:

$$ds = i\left(\frac{32}{r}\left(\frac{GM}{c^2}\right)^3 e^{-\left(\frac{c^2 r}{2GM}\right)}\right)(dU - dV)$$

The element ds represent element line inside quantum world but clearly not so easy because quantum world will making id hard to us so we can make some tricks and that we try to pretend that we see this world, how this could be expressed on physics? Follow me.

Now we can express the energy on this equation by:

$$dE = Fds$$

Where, dE is the energy, and F is the force, ds is the distance. And force is equal to:

$$F = -\frac{2GM}{c^2 r^2} = -\frac{\emptyset}{r^2}$$

Where, $\emptyset$ is the gravitational potential, so by substitution:

$$dE = -i\frac{2GM}{c^2 r^2}\frac{32}{r}\left(\frac{GM}{c^2}\right)^3 e^{-\left(\frac{c^2 r}{2GM}\right)}(dU - dV)$$

Notice that:

[5] for understanding the derivation of this equation return to my book no 1 on references list.

(The minus sign $-i$ and the imaginary number on the energy term here is exactly what scientists like Dirac and others saw about the negative mass, it is not on mass but energy, and that doesn't mean energy is negative, it is means the effect of the energy on coordinates like negative).

Ok, then by rearrangement:

$$dE = \frac{-i}{r^3}\left(\frac{2\sqrt{2}GM}{c^2}\right)^4 e^{\left(\frac{2GM}{c^2 r}\right)}(dU - dV)$$

Or by approximation again:

$$\boldsymbol{E = \frac{-i}{r^3}\left(\frac{2\sqrt{2}GM}{c^2}\right)^4 e^{\left(\frac{2GM}{c^2 r}\right)}(U - V)}$$

And this is the energy inside the quantum world.

So from the above equation we can note the next:

- The energy depends on mass, distance from mass, and space dimensions (unlike we get familiar to our universe) but the dependence on coordinates contains the formula $(U - V)$ and it is some kind strange.
- It doesn't depend on time strictly, but the dependence according to[6]:

  $$t = \frac{2GM}{c^3}\ln\left|\frac{U+V}{U-V}\right|$$

  This bizarre dependence makes the time very short when reactions took palace on moderate mass like earth. The result of $\frac{2GM}{c^3}$ is $1.45 \times 10^{-11}s$ and is small time for elementary particles reactions (we will take this later), furthermore this result depends on the term $\ln\left|\frac{U+V}{U-V}\right|$ and its new invented concept $(U - V)^{-1}$ which will be discussed later.
- $(U - V)^{-1}$This term has concept resemble to Feynman's propagator for subatomic reactions, and we know at that scale quantum mechanics plays a tremendous roles.
- We can postulate a tool to predict how much anybody could enter in reaction with the quantum world and how extent of this entering, this tool manipulated as follow:
  From this equation:

$$E = \left|\frac{-i}{r^3}\left(\frac{2\sqrt{2}GM}{c^2}\right)^4 e^{\left(\frac{2GM}{c^2 r}\right)}(U - V)\right|$$

[6] See my book no 1 on references list

If we divide $\frac{E}{mc^2}$, where, mc^2 is the particle total energy, we will get a factor of ratio for that, so:

$$\gamma = \frac{E}{mc^2} = \left| \frac{-i}{mc^2 r^3} \left(\frac{2\sqrt{2}GM}{c^2} \right)^4 e^{\left(\frac{2GM}{c^2 r}\right)} (U - V) \right|$$

Or, by rearrangement and omitting the minus sign and the imaginary number:

$$\boldsymbol{\gamma = \frac{\left(2\sqrt{2}GM\right)^4}{mr^3c^{10}} e^{\left(\frac{2GM}{c^2 r}\right)} (U - V)}$$

This equation represents how much the interactions between our macroscopic world and quantum world and that depends on the how big the mass is. We have two masses on this equation (planet's mass (M) and object's mass (m)), planet's mass has potential field and force field represented in acceleration of objects this acceleration interacts with objects by giving them energy, if the object's mass is very tiny then (γ) will be very big so the extra energy will get the object inside the quantum world, this will give us an idea that if big mass like human body could enter this world or not.

This equation contains three terms:

- First term is the power-dependence $\frac{\left(2\sqrt{2}GM\right)^4}{mr^3c^{10}}$with mass's field M this mass could be planet's mass (earth, black hole, neutron star) or any mass that has field, and inversely dependence with object's mass field m, and object could be anything.
- Exponential term $e^{\left(\frac{4GM}{c^2 r}\right)}$ with big mass field.
- Coordinates term $(U - V)$ and that term represents the quantum world dimensions, notice that it linearly proportion with object's mass:

  $$\frac{\gamma}{(U - V)} = \frac{\left(2\sqrt{2}GM\right)^4}{mr^3c^{10}} e^{\left(\frac{2GM}{c^2 r}\right)}$$

  Or

  $$\boldsymbol{(U - V) = \gamma \left(\frac{mr^3c^{10}}{\left(2\sqrt{2}GM\right)^4} e^{\left(\frac{c^2 r}{2GM}\right)} \right)}$$

This equation is very important to describe quantum world and we will discuss it later.

Chapter two

Applying on events on earth and black hole

We can apply these conclusions on the events on the earth to know how earth mass's field effects on high energetic elementary particles, and to know if this postulation correlates with laws that controls the interactions between them or not, and then making comparison between events on earth with on any higher mass planet like black hole.

So, from this equation:

$$\gamma = \frac{\left(2\sqrt{2}GM\right)^4}{mr^3c^{10}} e^{\left(\frac{2GM}{c^2r}\right)}(U-V)$$

By substitution with constants numbers [7]:

Earth mass: $M = 5.97 \times 10^{24} kg$

$G = 6.67 \times 10^{-11} m^3 s^{-2} kg^{-1}$

Earth radius: $r = 6.37 \times 10^6 m$

Light speed: $c = 3 \times 10^8$

$$\gamma = \frac{\left(2\sqrt{2} \times 6.67 \times 10^{-11} \times 5.97 \times 10^{24}\right)^4}{m \times (6.37 \times 10^6)^3 \times (3 \times 10^8)^{10}} e^{\left(\frac{2 \times 6.67 \times 10^{-11} \times 5.97 \times 10^{24}}{(3 \times 10^8)^2 \times 6.37 \times 10^6}\right)}(U-V)$$

So:

$$\gamma = \frac{2.7 \times 10^{-25}}{m \times (6.37 \times 10^6)^3} \times e^{(2.78 \times 10^{-9})}(U-V)$$

And we can take:

$$e^{(2.78 \times 10^{-9})} \approx 1$$

Then:

$$\gamma = \frac{1 \times 10^{-45}}{m}(U-V)$$

[7] These numbers are taken from the internet, maybe you find tiny discrepancies but the idea is coherent. All calculations are done by calculator model Casio fx-991ES PLUS (china).

And this is the effect of earth on events on it, we can discuss that on next points:

- As much as γ get bigger, quantum world will dominate the events on earth and that depends on m (the mass of object).
- The number 10^{-45} lay within the Heisenberg uncertainty principle.
- This number does influence on small particles like neutrino as we will see.
- There is another unknown term we need to know $(U - V)$ and it is very powerful on my book because the quantum world depends on it.

Uncertainty principle:

The uncertainty demonstrates that the uncertainty of measurements (inaccuracy) must fulfill the next equation:

$$\Delta x \Delta p \geq \frac{h}{4\pi}$$

The interpretation of that the smaller the $\Delta x \Delta p$, the domination of the quantum world, the bigger on them, the more precision on measurements. So we can postulate the next equation:

$$\beta \leq \frac{h}{4\pi \Delta x \Delta p} = \beta \leq \frac{h}{4\pi \Delta x \Delta v m}$$

Which β is the constant or the ratio and represents the domination of quantum world and must be less than one. So with substitution numerically, take c = light speed:

$$\beta \leq \frac{6.626 \times 10^{-34}}{m \times 4\pi \times \Delta x \times 3 \times 10^{8}}$$

So

$$\beta \leq \frac{1.75 \times 10^{-43}}{m \times \Delta x}$$

And with comparison with the result above:

$$\gamma = \frac{10^{-45}}{m} (U - V)$$

We find that

- $\beta \propto \frac{1}{\gamma}$
- $10^{-45} \leq 1.75 \times 10^{-43}$
  And then:
- $(U - V) \propto \Delta x^{-1}$
  Actually this term not just proportions with Δx but $\Delta x \Delta v$.

Return to our comparison:

$$\gamma = \frac{10^{-45}}{m}\ (U - V) \propto \frac{h}{(4\pi\Delta x\Delta v)m}$$

We will find that $(U - V) \propto (4\pi\Delta x\Delta v)^{-1}$ so $(U - V)$ has distance and time features and that because of the existence of $\Delta x\Delta v$ on the denominator and its units like $\frac{time}{distance^2}$, and $(U - V)^{-1}$ represents distance squared divided by time.

- So $(U - V)$ has two dimensions characteristics two of them are distances and time embedded and that represents understanding the complications of quantum world.
- This result depicts clearly that neutrino is the particle that bigger affected than larger particles by the field of earth at surface's distance because γ get bigger if the particle's mass (m) get smaller $\frac{2.524\times10^{-40}}{m}$ and that add sense to all results extracted from experiments that done to it.
- γ has the characteristics reaction propagator which making particles disappear and appear at short time. This behavior led many theories raised to explain this behavior, we will discuss the idea of "propagators" later.
- we can count addition terms that γ depends on through this equation:

$$\gamma = \frac{\left(2\sqrt{2}GM\right)^4}{mr^3c^{10}} e^{\left(\frac{4GM}{c^2r}\right)}(U - V)$$

  - It depends on the distance from the mass r^3 that means the less the distance (r) away from the mass (M) or the center, the bigger the reaction between particles.
  - Also it depends on particle mass (m), the smaller particle's mass, the bigger the γ, the more quantum effect on particle could be observed.
  - The big mass M^4 which acts as mass field on which the experiment done, it plays a powerful roles in quantum world's effects into our world, so the experiments on our planet surface not the same as on Sun's surface, and the experiments inside the earth not the same as at surface, so all the experiments –to be mentioned later- about neutrinos' behavior experiments were succeeded when did under earth surface.
  - Feynman's propagator or (probability amplitude) is coming from:

$$\Delta_{(x,t,x',t')} = \int_{x,t}^{x',t'} exp\left(\frac{i}{h}\int_t^{t'} \mathcal{L}\,(q,\dot{q},t)\,dt\right) D(q(dt))$$

    Which $\mathcal{L}\,(q,\dot{q},t)$ is the LaGrange as a function on all momentums and space. We can see the exponential on this equation which is the main characteristic of the quantum world, and we will come to this point. The above equation is describing the reaction according to space and time has a resemblance of this equation

$$\gamma = \frac{\left(2\sqrt{2}GM\right)^4}{mr^3c^{10}} e^{\left(\frac{2GM}{c^2r}\right)}(U-V)$$

And on contrary to propagator this equation has the ability to elongate the reaction so as we can predict and observe what happen inside.

- (U,V) represents the two dimensions of the quantum world which contains our four dimensions, that means deals with two dimensions addition to time embedded in it and expressed as $(U-V)$.

What is the $(U-V)$? And how does relate to (γ)?

In my previous book[8] I concluded that U and V have the following expression:

Outside event horizon of black hole, meaning $r \geq \frac{2GM}{c^2}$:

$$U = \left(\frac{c^2r}{2GM} - 1\right)^{\frac{1}{2}} e^{\left(\frac{c^2r}{2GM}\right)} cosh\left(\frac{c^3t}{4GM}\right)$$

$$V = \left(\frac{c^2r}{2GM} - 1\right)^{\frac{1}{2}} e^{\left(\frac{c^2r}{2GM}\right)} sinh\left(\frac{c^3t}{4GM}\right)$$

And inside event horizon $r \leq \frac{2GM}{c^2}$:

$$U = \left(1 - \frac{c^2r}{2GM}\right)^{\frac{1}{2}} e^{\left(\frac{c^2r}{2GM}\right)} cosh\left(\frac{c^3t}{4GM}\right)$$

$$V = \left(1 - \frac{c^2r}{2GM}\right)^{\frac{1}{2}} e^{\left(\frac{c^2r}{2GM}\right)} sinh\left(\frac{c^3t}{4GM}\right)$$

We will chose outside, so with the derivation to the time:

$$\frac{dU}{dt} = \left(\frac{c^2r}{2GM} - 1\right)^{\frac{1}{2}} e^{\left(\frac{c^2r}{2GM}\right)} \left(\frac{c^3}{4GM}\right) sinh\left(\frac{c^3t}{4GM}\right)$$

$$\frac{dV}{dt} = \left(\frac{c^2r}{2GM} - 1\right)^{\frac{1}{2}} e^{\left(\frac{c^2r}{2GM}\right)} \left(\frac{c^3}{4GM}\right) cosh\left(\frac{c^3t}{4GM}\right)$$

With taking the square and then subtract:

[8] See book no 1 on references list.

$$dU^2 - dV^2 = \left(\frac{c^2 r}{2GM} - 1\right) e^{\left(\frac{c^2 r}{GM}\right)} \left(\frac{c^3}{4GM}\right)^2 \left(cosh^2\left(\frac{c^3 t}{4GM}\right) - sinh^2\left(\frac{c^3 t}{4GM}\right)\right)$$

That equal:

$$dU^2 - dV^2 = \left(\frac{c^2 r}{2GM} - 1\right) e^{\left(\frac{c^2 r}{GM}\right)} \left(\frac{c^3}{4GM}\right)^2$$

Rearrange:

$$dU^2 - dV^2 = \left(\frac{c^8 r}{32G^3M^3} - \frac{c^6}{16G^2M^2}\right) e^{\left(\frac{c^2 r}{GM}\right)}$$

$$dU^2 - dV^2 = \left(\frac{c^8 r - 2c^6 GM}{32G^3M^3}\right) e^{\left(\frac{c^2 r}{GM}\right)}$$

Using square root and inverse (this is another approximation):

$$(dU - dV)^{-1} = \left(\frac{32G^3M^3}{c^8 r - 2c^6 GM}\right)^{\frac{1}{2}} e^{\left(\frac{2GM}{c^2 r}\right)}$$

Or

$$\boldsymbol{(U - V)^{-1} = \left(\frac{32G^3M^3}{c^8 r - 2c^6 GM}\right)^{\frac{1}{2}} e^{\left(\frac{2GM}{c^2 r}\right)}}$$

This is the equation that define the coordinates $(U - V)$.

The units, what we can know about units?
From this equation:

$$(U - V)^{-1} = \left(\frac{32G^3M^3}{c^8 r - 2c^6 GM}\right)^{\frac{1}{2}} e^{\left(\frac{2GM}{c^2 r}\right)}$$

Or:

$$(U - V)^{-1} = \left(\frac{32G^3M^3}{c^8 r}\right)^{\frac{1}{2}} e^{\left(\frac{2GM}{c^2 r}\right)}$$

So units calculated as follow:

G is calculated from:

$$G = \frac{c^2 r}{2M}$$

And:

$$(U-V)^{-1} \rightarrow \left[\frac{distance^9}{time^6 * mass^3}\right]^{1/2} [mass^3]^{1/2} \left[\frac{time^8}{distance^8 * distance}\right]^{1/2}$$

That implies:

$$\boldsymbol{(U-V)^{-1} \rightarrow [time]}$$

This method doesn't match to the previous!

The interpretation of that is inside quantum world, we can't feel anything except time, so this treatment isn't fruitful so I used the above uncertainty principle method.

The evidence that I have about the measurements inside quantum world is just time no more is the witness of prophet Mohamed, God peace upon him, when he raised to the seventh heaven at Mi'raj, he described the journey and found it was more comfortable and didn't feel about anything except time.

So the measurements that the prophet took is:

$$(U-V) = [time]^{-1}$$

(γ) determination:

On earth:

From this equation:

$$(U-V)^{-1} = \left(\frac{32G^3M^3}{c^8 r}\right)^{\frac{1}{2}} e^{\left(\frac{2GM}{c^2 r}\right)}$$

And by equating with the γ equation:

$$(U-V)^{-1} = \frac{\left(2\sqrt{2}GM\right)^4}{\gamma m r^3 c^{10}} e^{\left(\frac{2GM}{c^2 r}\right)}$$

The equality becomes:

$$\frac{\left(2\sqrt{2}GM\right)^4}{\gamma m r^3 c^{10}} e^{\left(\frac{2GM}{c^2 r}\right)} = \left(\frac{32G^3M^3}{c^8 r}\right)^{\frac{1}{2}} e^{\left(\frac{2GM}{c^2 r}\right)}$$

So:

$$\frac{1}{\gamma m} = \frac{c^6 r^{5/2}}{8\sqrt{2}(GM)^{5/2}}$$

$$\gamma m = \frac{8\sqrt{2}(GM)^{5/2}}{c^6 r^{5/2}}$$

Or

$$\boldsymbol{\gamma = \frac{8\sqrt{2}(GM)^{5/2}}{mc^6 r^{5/2}}}$$

Here we find that (γ) doesn't depends on coordinates but just distance and masses.

So we can give numerical example about by using earth calulations:

$$\gamma = \frac{8\sqrt{2}(6.67 \times 10^{-11} \times 5.9 \times 10^{24})^{5/2}}{m(3 \times 10^8)^6 r^{5/2}}$$

$$\gamma = \frac{3.4 \times 10^{37}}{m \times 7.3 \times 10^{50} \times r^{5/2}}$$

By substitution the radius:

$$\gamma = \frac{4.6 \times 10^{-14}}{m \times 2.58 \times 10^{16}}$$

$$\boldsymbol{\gamma = \frac{1.8 \times 10^{-30}}{m}}$$

The interpretation of this result is to magnify γ we need 1.8×10^{-30} of mass to influence on the particle with the mass (m) to enter in interaction with quantum world including entering in there.

We can generalize the equation to any planet:

$$\boldsymbol{\gamma = \frac{5.64 \times 10^{-76} \times M^{5/2}}{mr^2}}$$

Applying on black hole:
Using his equation:

$$\gamma = \frac{5.64 \times 10^{-76} \times M^{5/2}}{mr^2}$$

Let us assume that our sun is shrunk to black hole with $M = 1.9 \times 10^{30}$ and radius calculated by:

$$r = \frac{2GM}{c^2}$$

Then:

$$r = \frac{2 \times 6.67 \times 10^{-11} \times 1.9 \times 10^{30}}{(3 \times 10^8)^2}$$

$$r = 2816\, meter$$

Then:

$$\gamma = \frac{5.64 \times 10^{-76} \times 1.9 \times 10^{30^{5/2}}}{m \times 2816^2}$$

$$\boldsymbol{\gamma = \frac{3.5 \times 10^{-11}}{m}}$$

You can see that even in black hole horizon the γ has small value and just for atoms or nuclei that can deal with quantum world.

Isra's propagator $\gamma(U - V)^{-1}$ and Feynman propagator:

In this section we will get deeper in γ and in quantum world to talk something about the propagators.

In quantum mechanics and quantum field theory, the propagator is a function that specifies the probability amplitude for a particle to travel from one place to another in a given period of time, or to travel with a certain energy and momentum. In Feynman diagrams, which serve to calculate the rate of collisions in quantum field theory, virtual particles contribute their propagator to the rate of the scattering event described by the respective diagram. These may also be viewed as the inverse of the wave operator appropriate to the particle, and called Feynman's propagator. So propagator is given through this equation:

$$\Delta_{(x,t,x',t')} = \int_{x,t}^{x',t'} exp\left(\frac{i}{\hbar}\int_{t}^{t'} \mathcal{L}\,(q,\dot{q},t)\,dt\right) D(q(dt))$$

$\Delta_{(x,t,x',t')}$ is called the propagator and it is function of all of these terms. This equation called the path integral also and cover all space and momentum that particles would gone into while reaction time, the first integral is for space and time, the second integral which is inside the exponential cover the quantum behavior of particles while the reaction is running, and we see the LaGrange equation which determine the shortest path (path in time of course) for this

reaction, and (D) represents the states that related to the particles such as wave functions and others.

We can see the propagator is depends on exponential term which exists in this equation and represents the powerful of the quantum world is, this exponential represents the leaps of these particles when jumps in and out of the quantum world.

The simplest way to express this equation after expand the exponential is:

$$G_{(x,y)} = \frac{1}{(2\pi)^4}\int_{p(x-y)}^{p'(x'-y')} d^4p\left(\frac{exp\left(-ip(x-y)\right)}{p^2 - m^2 \pm i\varepsilon}\right)$$

It is represents four vectors equation, and it express explicitly the momentum and distance. You can see again the exponential function with negative power which says that if momentum get bigger the function will get smaller and that make us miss many events hidden behind time.

In my equation:

$$\gamma(U-V)^{-1} = \frac{\left(2\sqrt{2}GM\right)^4}{mr^3c^{10}}e^{\left(\frac{2GM}{c^2r}\right)}$$

We find that $\gamma(U-V)^{-1}$ represents a propagator (and I called it Isra's propagator[9] or IP) because it is describes the reactions in space (recall the units of $(U-V)^{-1}$ is distance square over time) and describes the reaction inside quantum world. As I said quantum world prohibits us to see inside but we are smarter and can prolong the watching screen (distance and time) through using the action of earth mass's field or any field to do that.

Opening the quantum world's gates:

In this section I will be insolent with the nature and try to jump steps inside the quantum world and I want ask a question, can we travel across universe using gates through quantum world? Can we steps on that any planet far away from us by pushing a button? Let us talk about that.

Quantum world and time's behavior:

Now we reached to the biggest question, can we travel through the time? Can we travel across the galaxies to a distant place simultaneously?

The answer of this question maybe on this equation.

$$t = \frac{2GM}{c^3}\ln\left|\frac{U+V}{U-V}\right|$$

We know that universe is very stiff and if we want to lean it in order to control the time, we will find that very hard, also we know from this book that time is embedded into the quantum

[9] Isra is my beloved daughter.

dimensions. That means time could move forward and backward according to the sign of the resultant of this equation $\ln\left|\frac{U+V}{U-V}\right|$, and this equation depends on the propagator $(U-V)^{-1}$ and that as follow:

- $\ln\left|\frac{U+V}{U-V}\right|$ never be less than 0.
- Always $(U-V) < (U+V)$, so time can't reverse it movement.
- For huge transitions $\frac{2GM}{c^3} \gg 1$ so $M \gg \frac{2c^3}{2G}$ and that means $M \gg 2\times 10^{35}$.
- Another possibility $(U-V)$ be very small so $(U-V)^{-1}$ very big so as $\ln\left|\frac{U+V}{U-V}\right|$ be big.
- Also we can see the existence of the natural logarithm that means the bigger the change of the propagator$(U-V)^{-1}$, the less effect on the result coming out from logarithm, and that I supposed on my previous book, that logarithm does prohibit us to measure events inside microscopic world.
- The tiny outcome from logarithm is what the Prophet Muhammad, may God's prayers and peace be upon him, experienced and then when he told his Quraysh's tribe that he had risen to the heavens and then came, they were amazed at the small time that he had consumed, unfortunately they didn't know anything about General relativity.
- Another proof for tiny time of entering the quantum world is the speech of God Almighty to the polytheists when He said: "If we had opened a door on them from the sky, and in which they would have remained ascent, they would have said that our eyes would have bewitched"[10]. The meaning is they didn't feel anything except the tiny time that they had experienced.
- We can't know anything about quantum world or entering inside wormholes unless we have been already there.
- Time doesn't get in minus sign (contrary to what I said above) and we can know that from Schwarzschild's radius $r = \frac{2GM}{c^2}$ and with dividing by velocity we get time so:
  $t = \frac{2GM}{c^3}$
  And while the right hand side never be negative then so time.
  So because of all above time is hard to travel on huge steps unless we find an energy coming from mass above than 10^{35} which is thousands times sun's mass. And that is hard with gravitational energy, but what about another energy? We will speak about electromagnetic later.

[10] Surat AlHagr verse 14.

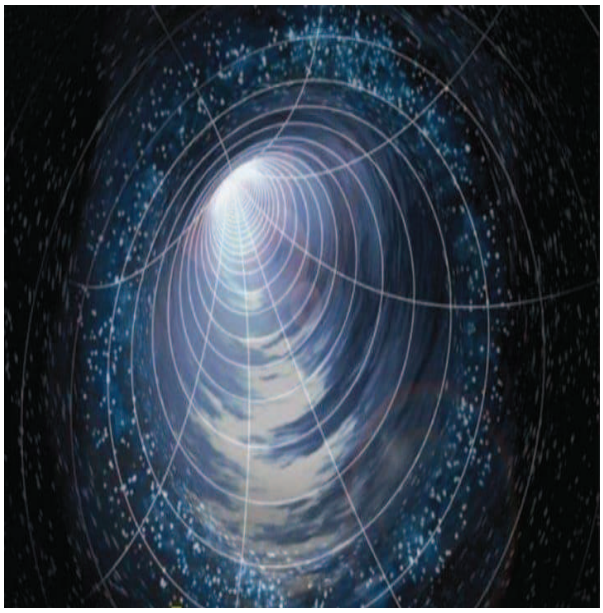
Quantum world's gates and (IP) propagator:

Again the main event of this book is the question that I have always asked, can we travel far distance to other galaxies simultaneously used what we know about "quantum theories of acting at distance"?

The answer is difficult but I think it will come out through the understanding of the propagators. The reason of using this entrance is the strange characteristics of them, so let us do something about.

So from this equation:

$$\gamma(U-V)^{-1} = \frac{\left(2\sqrt{2}GM\right)^4}{mr^3c^{10}} e^{\left(\frac{2GM}{c^2r}\right)}$$



We can have remember[11]:

$$(U-V)^{-1} \rightarrow \left[\frac{distance^2}{time}\right]$$

So these units mean an area or a door and the thickness of this door depends on $\frac{1}{time}$ and that means if the time is big, the door thickness is small so we travel a tremendous distances and take a very short time, and this is all what we know about quantum world.

So from the above equation we can mention some points:

- Propagator depends on the proportion between the energy of gravitation potential field and particle's mass energy. So on the sun we can calculate this proportion for example as: (Use $\gamma = 1$)

$$(U-V)^{-1} = \frac{\left(2\sqrt{2}GM\right)^4}{mr^3c^{10}} e^{\left(\frac{2GM}{c^2r}\right)}$$

$$(U-V)^{-1} = \frac{\left(2\sqrt{2}\times 6.67\times 10^{-11}\times 1.989\times 10^{30}\right)^4}{m\times 6.957\times 10^{8^3}(3\times 10^8)^{10}} \times e^{\left(\frac{4\times 6.67\times 10^{-11}\times 1.99\times 10^{30}}{(3\times 10^8)^2\times 6.9\times 10^7}\right)}$$

$$(U-V)^{-1} = \frac{1.1\times 10^{-31}}{m}$$

[11] Don't try to determine using units analysis here, it is misleading.

That means the ratio between sun and earth[12] for the same particle is:

$$\frac{1.1 \times 10^{-31}}{10^{-45}} = 1 \times 10^{14}$$

That means the effect of the quantum world in events on the sun is that much than on earth.

Let us make an example, for transfer mass like human mass, what is the planet mass needed for that, or what the energy needed for that?

From this equation:

$$\gamma = \frac{\left(2\sqrt{2}GM\right)^4}{mr^3c^{10}} e^{\left(\frac{2GM}{c^2r}\right)}(U-V)$$

$$\gamma(U-V)^{-1} = \frac{1.26 \times 10^{-39} \times M^4}{5.9 \times 10^{84} \times m \times r^3}$$

$$\gamma(U-V)^{-1} = \frac{2.13 \times 10^{-124} \times M^4}{m \times r^3}$$

(What this number1.1×10^{-124} looks like? it is seem to be Einstein constant for vacuum gravitating, in my article[13] I reached to the same conclusion about the radiation inside a mass and I called it "Alions" referring to my name. thank God).

Now let us assume the human we need to transfer has 100 kilogram, so:

$$\gamma(U-V)^{-1} \gg \frac{2.13 \times 10^{-124} \times M^4}{100 \times r^3}$$

$$\gamma(U-V)^{-1} \gg \frac{1.1 \times 10^{-126} \times M^4}{r^3}$$

And

The mass needed to do that is:

$$\boldsymbol{M \gg 1 \times 10^{31} \sqrt[4]{r^3 \gamma (U-V)^{-1}}\ kg}$$

Once again you can see how huge this number is. We need to do that at least $10^{31} \times \sqrt[4]{r^3}$ kilo gram, but actually we need to multiply this number with more billion because of this constant γ which represents how much the effect of quantum world and we need to magnify this number.

[12] See page 8

[13] See my book no 8 on references list.

That show us also why propagator is so small and restricted to very small particles. And also show us the difficulty for human if want to control the universe so if you controlled space and time, you need to create an energy at such much. Furthermore this result show us the huge of almighty God and his incredible power that make him to rise his prophet Mohammed, god pray and peace upon him, to the seventh heaven at Mi'raj night event.

The reason of the huge inflation of the early universe:

In my book[14], I demonstrated that early universe has a huge mass that let it inflated with particles called tachyon in quantum dimensions so that is the reason of inflation, so here I have good feeling to figure out something like that.

From this equation

$$(dU - dV)^{-1} = \left(\frac{32G^3M^3}{c^8 r}\right)^{\frac{1}{2}} e^{\left(\frac{2GM}{c^2 r}\right)}$$

Let us assume that universe inflated at plank's mass $m = 10^{-8}kg$, and plank's $r = 10^{-35}meter$, and we need the propagator so:

$$(U - V)^{-1} = \left(\frac{32(6.67 \times 10^{-11} \times 10^{-8})^3}{(3 \times 10^8)^8 \times 10^{-35}}\right)^{\frac{1}{2}} e^{\left(\frac{2\times 6.67\times 10^{-11}\times 10^{-8}}{(3\times 10^8)^2\times 10^{-35}}\right)}$$

So

$$(U - V)^{-1} = 1.2 \times 10^{-43} e^{(1.47)}$$

$$\boldsymbol{(U - V)^{-1} = 5.22 \times 10^{-43} distance^2/time}$$

This is some kind of plank's time.

Now what if we flip this value?

$$(U - V) = 4.6 \times 10^{41}$$

This value has distinguished meaning, it gives reciprocal to plank's time or close to it, notice the units:

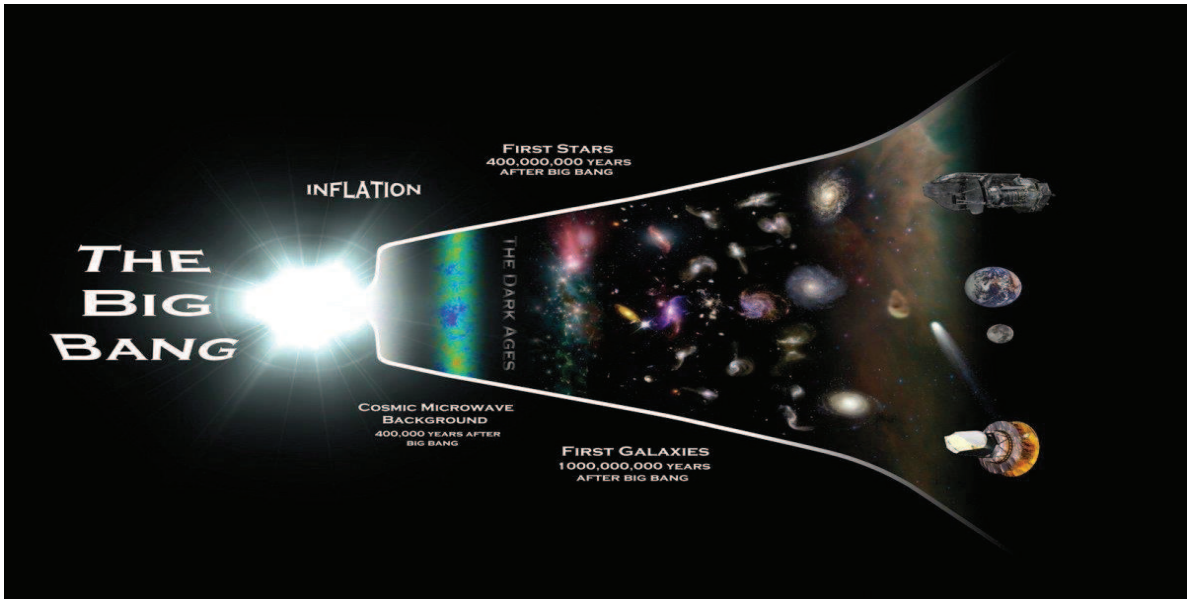
$$(U - V) = \left[\frac{time}{distance^2}\right]$$

[14] See reference no 8.

So I think the right answer is the inflation of the universe happened in two dimensions inside the quantum world, and that the reason of this huge number of expansion 4.6×10^{41} times. Thank God.

Why the universe didn't keep on its inflation until now? The answer in the equation again:

Look at the exponential term, when the radius of the universe get bigger the exponential get bigger also and then will dominate, so the universe would jump out of the quantum world to our world, i.e. from two dimensional space to four dimensions so the inflation stopped.



Can we use another potential field to open these gates?

What about electrical potential?

There are some similarities between gravitational and electrical potentials:

$$\emptyset = \frac{2GM}{c^2 r}, \quad V = \frac{Nq}{4\pi\varepsilon_0 c^2 r}$$

(N) is the number of charges, So we can use some tricks to replace gravitation potential as follow:

$$\frac{Nq}{4\pi\,\varepsilon_0 c^2 r} = \frac{2GM}{c^2 r}$$

So

$$Nq = 8\pi G\varepsilon_0 M$$

And the mass that needed to open these gates is obtained from this equation:

$M \gg 1 \times 10^{31} \sqrt[4]{r^3 \gamma (U-V)^{-1}}$

So, by substitution;

$Nq = 8\pi G \varepsilon_0 \times 1 \times 10^{31} \sqrt[4]{r^3 \gamma (U-V)^{-1}}$

$Nq = 8\pi \times 6.67 \times 0^{-11} \times 8.85 \times 0^{-12} \times 1 \times 10^{31} (r^3 \gamma (U-V)^{-1})^{1/4}$

$Nq = 1.48 \times 0^{11} (r^3 \gamma (U-V)^{-1})^{1/4}$

Suppose r = 1 meter so the number of charge is:

$$N = \frac{1.48 \times 0^{11} (\gamma (U-V)^{-1})^{1/4}}{1.6 \times 0^{-19}}$$

Or

$N = 9.2 \times 0^{29} \times (\gamma (U-V)^{-1})^{1/4}$

So propagator equal:

$\boldsymbol{(\gamma (U-V)^{-1}) = N^4 \times 1.4 \times 10^{-120}}$

This number 1.4×10^{-120} again closed to inverse of vacuum energy, and has relation to particles creation or fetching from the quantum world and that is what called "vacuum fluctuations".

See how the small the propagator is, and how the huge of the number of charges that needed to open the gates. if we choose $N = 6.02 \times 10^{23}$ (Avogadro's number), then:

$(\gamma (U-V)^{-1}) = (6.02 \times 10^{23})^4 \times 1.4 \times 10^{-120}$

$\boldsymbol{(\gamma (U-V)^{-1}) = 1.3 \times 10^{95} \times 1.4 \times 10^{-120} = 1.8 \times 10^{-25}} \; meter^2/second$

That means we need to $10^{25} \times N$ charges to open one $meter^2/second$ or one unit of propagator.

Really I want to ask Mr. Tesla and Mr. Einstein how they did the experiments and collect $10^{25} \times 10^{23}$ of charges? May be the answer in lasers.

The main reason of the disability for human to travel across time is the tiny constants (G) for gravitation field and (q) electrical charges. These constants have a tremendous benefits to human, suppose they have bigger values, human could find difficulties for living in this universe, all forces in this universe have these constants so it is interact according to. These constants make our universe beautiful but also prohibit us from many things and time travel one of it.

For example we need to $10^{25} \times 6.02 \times 10^{23}$ of electrons for opening quantum world's doors for time traveling so if we multiplied this number with electron mass we will find that:

$10^{25} \times 6.02 \times 10^{23} \times 1.09 \times 10^{-31} \approx 10^{17} kg$ of electrons and this is huge value of matter.

Higgs theory:

The Higgs mechanism has a key role in the electroweak theory, which unifies interactions via the weak force and the electromagnetic force. It explains why the carriers of the weak force, the W particles and the Z particles, are heavy while the carrier of the electromagnetic force, the photon, has a mass of zero. Experimental evidence for the Higgs boson is a direct indication for the existence of the Higgs field. It is also possible that there is more than one type of Higgs boson. Experiments searched for the massive Higgs boson at the highest-energy particle-accelerator colliders, in particular the Tevatron at the Fermi National Accelerator Laboratory and the Large Hadron Collider (LHC) at CERN (European Organization for Nuclear Research). On July 4, 2012, scientists at the LHC announced that they had detected an interesting signal that was likely from a Higgs boson with a mass of 125–126 gigaelectron volts (billion electron volts; GeV). Further data was needed to definitively confirm those observations, and such confirmation was announced in March 2013. That same year Higgs and Belgian physicist François Englert (who had also proposed the Higgs mechanism) shared the Nobel Prize in Physics.

Higgs mechanism has great concurrent technique as my hypothesis, so mine could give a real explanation to Higgs' mechanism.

Chapter three

Neutrino experiments that could prove my postulation:

Neutrinos—fundamental particles most often produced in the fiery hearts of stars—are both famously elusive and tremendously abundant. While neutrinos endlessly bombard every inch of the Earth's surface at nearly the speed of light, they seldom interact with any matter. This ability to sail unhindered and unnoticed through almost anything earned neutrinos the nickname "ghost" particles. But despite their imperceptibility, neutrinos could be the key to understanding how our universe evolved just after the Big Bang and why the world is made of matter[15], and I introduced them here as evidence of my postulation.

The Standard Solar Model is the working hypothesis of how the Sun produces its luminosity through controlled thermonuclear fusion of hydrogen into helium in its core. This model also explains what we see in other stars. According to the standard solar model, lots of neutrinos are produced in the nuclear reactions in the Sun's core, and since they interact weakly with matter, they should travel unimpeded from the core to Earth.

Detecting electron neutrino:

The current understanding of the deficit of solar neutrinos detected by experiments on Earth is related to the fact that current neutrino detectors are sensitive only to electron neutrinos. Pontecorvo in 1967 proposed that neutrinos might oscillate, or change, flavors if a mass difference existed between the three varieties of neutrinos. The theory of how such oscillations might alter the flavor of a neutrino passing through matter along its path has been worked out by Mikheyev, Smirnov and Wolfenstein (1985) and is now referred to as the "MSW effect". It is likely that the electron neutrinos produced in the reactions in the Sun's core are altered as they travel to Earth and thus the number of them that we detect does not measure the true number emitted[16].

I will speak on this book and bringing these experiments as evidence to two points:

- Earth's mass field interacts with these particles in a powerful way and that result of the next equation:

$$\gamma(U-V)^{-1} = \frac{\left(2\sqrt{2}GM\right)^4}{mr^3c^{10}} e^{\left(\frac{2GM}{c^2r}\right)}$$

[15] https://www.bnl.gov/science/DUNE.php
[16] http://hosting.astro.cornell.edu/academics/courses/astro201/sun_neutrino.htm

From this equation you can see clearly the existence of particle's mass on the denominator means that the (IP) propagator of particles' interaction affected by it, so the less mass, the bigger benefit for universe history and behavior studies.

- When I substituted with numerical examples on earth I get these result:

$$\gamma(U-V)^{-1} = \frac{2.7 \times 10^{-25}}{mr^3}$$

From above equation you can see the number 2.7×10^{-25} has magnitude bigger than proton's that means proton is the anticipated particle for experiments, unfortunately, the earth's radius has inverse effect, so when it gets bigger, the propagator get small, so all experiments that I will introduced here is done under the earth to magnify the outcome, you can see the power factor on the radius meaning the huge influence on experiment.

From the two points of view (particle's mass and earth's radius) it is better for any experiments be done on neutrinos must be under earth to some extent. So let us mention some of them.

1. **Philadelphia project for Einstein [17]:**

The experiment was allegedly based on an aspect of some unified field theory, a term coined by Albert Einstein to describe a class of potential theories; such theories would aim to describe — mathematically and physically — the interrelated nature of the forces of electromagnetism and gravity, in other words, uniting their respective fields into a single field.

According to some accounts, unspecified "researchers" thought that some version of this field would enable using large electrical generators to bend light around an object via refraction, so that the object became completely invisible. The Navy regarded this as of military value and it sponsored the experiment.

Another unattributed version of the story proposes that researchers were preparing magnetic and gravitational measurements of the seafloor to detect anomalies, supposedly based on Einstein's attempts to understand gravity. In this version, there were also related secret experiments in Nazi Germany to find anti-gravity, allegedly led by SS-Obergruppenführer Hans Kammler.

You can see that using of electric and magnetic field let some interactions with gravity could be occurred so I believe my hypothesis will make surprises about that, I spoke about that (see page 27).

2. **OPERA project (oscillation project with Emulsion-Tracking Apparatus)[18]:**

The Oscillation Project with Emulsion-Tracking Apparatus (OPERA) experiment is regarded by some as an empirical confirmation of the special theory of relativity (STR). It is shown that this

[17] https://en.wikipedia.org/wiki/Philadelphia_Experiment

[18] https://www.researchgate.net/publication/258707163_The_Oscillation_Project_with_Emulsion-Tracking_Apparatus_OPERA_experiment_An_argument_for_superluminal_velocities

opinion is mistaken because STR cannot exclude superluminal velocities. Einstein's derivation of the Lorentz transformation was based on a contradiction, which can be reduced mathematically to (+ = -). His premise that the speed of light in a vacuum is constant, independent of the motion of its source, is self-contradicting. Hence, by the laws of mathematics, every inference drawn from it is arbitrary, which includes that the speed of light cannot be exceeded. This inference has also been empirically refuted through the results of certain experiments on quantum mechanics, which can only be explained by either admitting superluminal velocities or by admitting miracles (action at a distance).

The experiment was run as this:

A 400 GeV proton beam is extracted from the CERN SPS in 10.5 μs short pulses with a design intensity of 2.4×10^{13}protons on target (pot) per pulse. The interactions of the proton beam with a series of thin graphite rod helium-cooled produces secondary pions and kaons that, by a system of two magnetic lenses (the horn and the reflector) are focused into a quasiparallel beam. In the 1000 m long decay pipe the pions and kaons decay mainly in muons and muon-neutrinos. Detectors at the end of the dump allow monitoring the flux of muon and neutrino, the muons are absorbed in the rock while neutrinos continue their travel toward the detector[19].

I concluded that:

- The cause of the stability and large gain of experiment returns to the prolonging of life time and stability of neutrino due to prolong of the propagator according to the above equation, and the experiment is done underground and that proof my hypothesis.

3. Deep Underground Neutrino Experiment (DUNE):

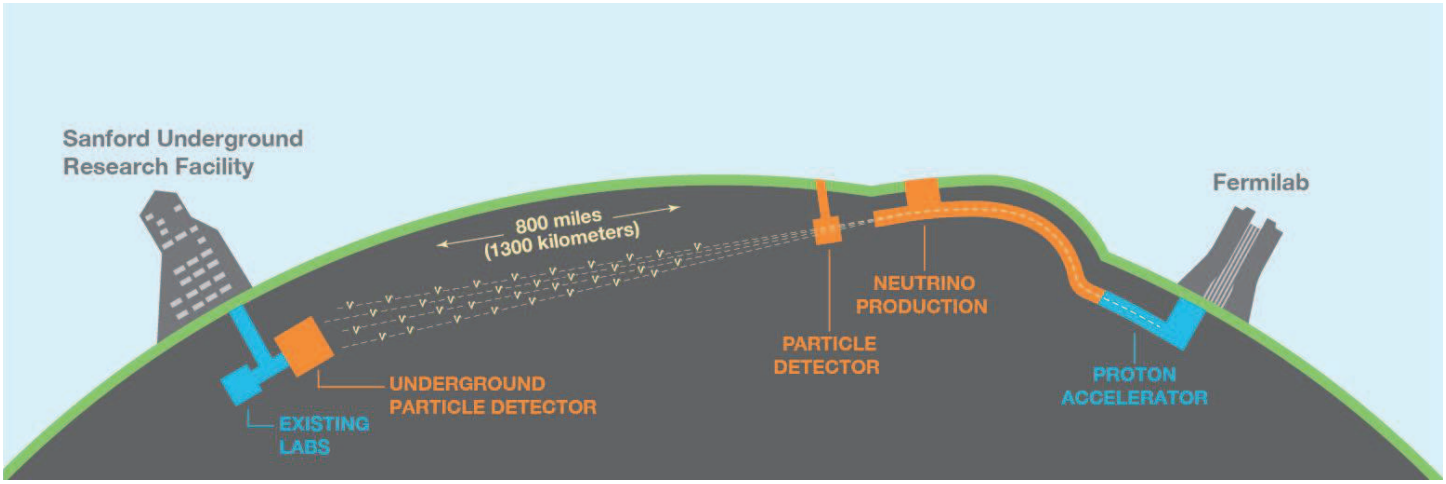
The Deep Underground Neutrino Experiment (DUNE) is an international world-class experiment dedicated to addressing the searches for leptonic charge-parity symmetry violation, stands ready to capture supernova neutrino bursts, and seeks to observe nucleon decay as a signature of a grand unified theory underlying the standard model[20].
The Deep Underground Neutrino Experiment (DUNE), a new globally organized endeavor with large international partnerships, grows out of a former neutrino research collaboration known as the Long Baseline Neutrino Experiment (LBNE). The DUNE collaboration, now global, continues to grow, and with 750 scientists, is the largest neutrino experiment collaboration in the world. Based on recommendations from a recent high-energy physics advisory panel, the process of forming a new fully internationalized collaboration to construct the experiment and the Long-Baseline Neutrino Facility (LBNF) in which it will be situated is well underway.
The experiment:
The experiment will build on Fermi National Accelerator Laboratory's existing accelerator complex to supply its neutrinos. Fermilab's Main Injector Ring will smash energetic protons

[19] See https://arxiv.org/ftp/arxiv/papers/0812/0812.0451.pdf or references
[20] https://arxiv.org/abs/2002.02967

into a fixed target to produce short-lived particles called pions and kaons. These particles are aimed into a several-hundred-foot-long tunnel, where they decay, transforming into an intense collimated beam of neutrinos[21].
DUNE will consist of two neutrino detectors placed in the world's most intense neutrino beam. One detector will record particle interactions near the source of the beam, at the Fermi National Accelerator Laboratory in Batavia, Illinois. A second, much larger, detector will be installed more than a kilometer underground at the Sanford Underground Research Laboratory in Lead, South Dakota — 1,300 kilometers downstream of the source. These detectors will enable scientists to search for new subatomic phenomena and potentially transform our understanding of neutrinos and their role in the universe.

Two prototype far detectors are at the European research center CERN. The first started taking data in September 2018 and the second is under construction.

The Long-Baseline Neutrino Facility will provide the neutrino beamline and the infrastructure that will support the DUNE detectors. Groundbreaking for the LBNF excavation and construction at Sanford Lab occurred on July 21, 2017.[22]



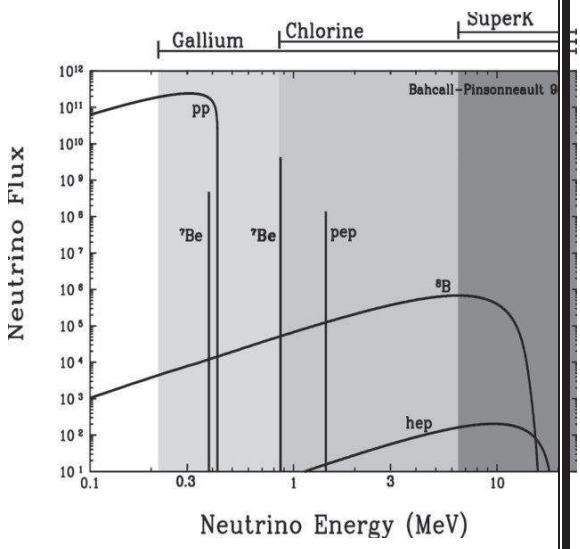
Picture source: https://www.dunescience.org/

In this figure we can see the experiment planned to run underground and that concur with my hypothesis.

[21] https://www.bnl.gov/science/DUNE.php
[22] https://www.dunescience.org/

4. Solar Neutrino Problem[23]:

The solar neutrino problem, the longstanding disagreement between the measured and predicted neutrino flux from the Sun, has moved from being a curiosity of solar physics to a research problem that now commands the attention of a large number of physicists who have at their disposal impressive experimental resources. The change in fortune of this problem owes much to the persistence of the pioneers in this field and the mounting evidence that the deficit is real.



In this Figure Solar neutrino energy spectrum as predicted by the Bahcall-Pinsonneault 1998 Standard Solar Model. Shown also, are the energy thresholds for different solar neutrino experiments. Courtesy J N Bahcall.
From my equation you can see the effect of earth's mass on experiment so I suggest that experiments done more deeper underground to make more stable results.

5. ATLAS Experiment[24] :

The general purpose detectors, ATLAS (A Toroidal LHC ApparatuS) and CMS (Compact Muon Solenoid) have been built for probing p-p and A-A collisions [25].

The ATLAS Detector is about 45 meters long, more than 25 meters high, and weighs about 7,000 tons. It is about half as big as the Notre Dame Cathedral in Paris and weighs the same as the Eiffel Tower or a hundred 747 jets (empty).

ATLAS 13 TeV Fist Stable Beam Collisions displaying of a proton-proton collision event recorded by ATLAS on 3 June 2015, with the first LHC stable beams at a collision energy of 13 TeV. Tracks reconstructed from hits in the inner tracking detector are shown as arcs curving in the solenoidal magnetic field. The green and yellow bars indicate energy deposits in the liquid argon and scintillating-tile calorimeters, clustered in a structure typical of a di-jet event. The transverse momentum of the jets are about 200 GeV and 170 GeV.

The Large Hadron Collider (LHC) at CERN will extend the frontiers of particle physics with its unprecedented high energy and luminosity. Inside the LHC, bunches of up to 1011 protons (p) will collide 40 million times per second to provide 14 TeV proton-proton collisions at a design luminosity of $10^{34} cm^{-2} s^{-1}$. The LHC will also collide heavy ions (A), in particular lead nuclei, at 5.5 TeV per nucleon pair, at a design luminosity of $10^{27} cm^{-2} s^{-1}$. The high

[23] The solar neutrino problem, HARRISON B PROSPER Department of Physics, Florida State University, Tallahassee, Florida 32306, USA https://www.researchgate.net/publication/226488283_Solar_neutrino_problem
[24] https://po.usatlas.bnl.gov/
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interaction rates, radiation doses, particle multiplicities and energies, as well as the requirements for precision measurements have set new standards for the design of particle detectors.

6. Antarctic Muon and Neutrino Detector Array (AMANDA) [26]:

Enormous detectors with unprecedented sensitivity will be required to search for astrophysical sources of neutrinos. If the transparency of deep polar ice is similar to that measured in the laboratory, then AMANDA (Antarctic Muon And Neutrino Detector Array) may be the most cost-effective way to reach the detector volumes required to search for astrophysical sources of high energy neutrinos or WIMP annihilation within the sun. We describe a series of tests that will be conducted near the South Pole Station during the '91–'92 Antarctic campaign. The primary goal of these tests is to extend the optical transparency measurements of polar ice to a depth of one kilometer by measuring the rate of downward-moving muons with a prototype string of 4 optical modules. Additional objectives include the measurement of up/down discrimination, background light levels, and timing resolution.

The author counted many benefits of choosing Antarctica[27], but there are another usefulness, look at the below equation:

$$\frac{q}{4\pi\,\varepsilon_0 c^2 r} = \frac{2GM}{c^2 r} \propto \sqrt[4]{r^3\gamma(U-V)^{-1}}$$

You will notice easily the alongside proportion between the propagator and electrical field, and we know that electrical field is linearly proportion with magnetic field, so propagator also does, so increasing propagator will return to it the stability of the reaction, pay attention, when I say stable reaction not observing the reaction, we cannot watching reactions that have high propagators in real-time but we can measure results after reactions took palace.

The other benefit is that muon is higher mass than neutrino so its γ is less.

7. Collider Detector of Firmilab[28].

They used high energetic particles about TeV, so it has the above mentioned evidence.

8. Casmir experiment [29]:

The physical origin of the Casimir force is connected with the existence of zero-point and thermal fluctuations. The Casimir effect is very general and finds applications in various fields of physics. On my trail on section (Can we use another potential field to open these gates?) I reached that the electrical energy needed to create a high propagator is about 10^{120} and this result is closed the vacuum energy that reached in the experiment.

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[26] https://www.researchgate.net/publication/234285963_AMANDA_Antarctic_Muon_and_Neutrino_Detector_Array

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Conclusion:

Eventually I recommended to use the Holy Quran as one of knowledge resources because it is the creator's catalog and possess a tremendous knowledge from the creator, it doesn't matter if you were Muslim or not you need it for discoveries and space explorations.

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I would like to thank Mr. Leonard Susskind and Mr. Robert Davie for the beautiful explanation of general relativity.

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