

**MAGNETIC AND ELECTRICAL FIELDS ARE NOT INVISIBLE FIELDS BUT REAL
MECHANICAL WAVES AND VORTICES THAT SHAPE THROW SPACE FABRIC STRUCTURE,
UNIFIED THEORY OF GRAVITY AND MAGNETISM, THE PHYSICAL ORIGIN OF LORENTZ
TRANSFORMATION**

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ABSTRACT

One of the fundamental forces in nature is the electromagnetic force which is responsible for attraction and repulsion forces between charged particles, this force is consider until now invisible force and do not need medium shape in, I introduce this research for show new theory of electromagnetism and it flow throw space time fabric the same fabric gravity force shape throw, I will show in this research that all electromagnetic phenomena shape in the space time fabric structure and it is not invisible, we start that by prove new space time fabric physical property in interaction with matter that the fabric resist matter movement with speed in it with drag force, thus any accelerated particle will produce mechanical wave follow it in space time fabric.

Then we redefine space fabric from information in Alquran ALkareem and it is not vacuum but kind of structure that filled with matter but that matter is even and smooth without separation between its particles and atoms like ordinary matter and its real name is asmaa. according to concept that space fabric medium resist matter speed by drag force we will re understand electromagnetism phenomena.

Electron has very fast spinning movement in space fabric this will create circular wave in space fabric around electron as it resist matter speed, this wave is real mechanical wave that has force, if another electron get near the first their waves will make the two electrons move away from each other by wave pressure this called now repulsion force between electron or electrons has negative charge, we knew that atoms nucleus contain protons and neutrons and each contain three elementary particles called quarks, each quark has fast spin movement and will make circular wave around each one in space fabric, but quarks are close together by nuclear fore which is bigger than their waves repulsion force thus their waves will combined making big circular waves in space fabric around nucleus which known now as atom energy level or atoms orbits.

We will also show that magnetic fields are vortices or waves in space fabric that if we have direct current of electrons in wire all their circular electrons waves number will add together as electrons move similarly in same direction in wire make big circular real waves around wire in space fabric this is called now magnetic fields, and if we make this current of electron in wire alternative current, electron will move up and down making also their waves move up and down and due to space fabric physical properties this disturbance in space fabric will make transverse wave in space fabric structure moving away from wire with fixed speed depend on medium properties and this is called now electromagnetic waves, then found that Maxwell conclude his electromagnetic forces equation based on same final results of this research.

We will also illustrate special relativity experiment in concept that space fabric resist particles speed and the more object speed increase in space fabric the more its internal elections normal speed decrease not that speed of light is the ultimate speed and we will find drag force equation on particle or object accelerated in pace fabric , and from Maxwell equations we will find that drag force from space fabric to particles speed proportional to this factor $\frac{v^2}{c^2}$ which scientist Lorentz discover by pure numerical try and error .

We will also calculate space fabric drag force on electron moving in speed near light speed.

We also will know that the famous energy to mass relation come also from that drag force equation.

Finally we will apply our theory on light generation process and we will get new shape of light other than known today and that shape illustrate clearly why light has dual nature.

Key Words: Quantum Gravity, Unified Theory of Gravity and Magnetism, Electric Fields, Magnetic Fields, Space Fabric Vortices.

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1. INTRODUCTION

Electromagnetic force is important fundamental forces in our life, it is mainly responsible for bonding of atoms in matter, another important force is the gravitational force which responsible for our stability on earth and the rotation of the earth around the sun, it mainly responsible for the attraction of planets and objects with masses with each other, Physicians have been trying since the last century to find a unified theory to understand electromagnetic forces and gravitational forces in one unified theory, I introduce this research to demonstrate new understanding of electromagnetic phenomena and show that forces like magnetic fields and electrical fields are not invisible fields but shape throw space -time fabric structure the same structure responsible for gravity force.

We first will give brief illustration about current theories of electromagnetic forces, we find The first connection between electric and magnetic effects was discovered by Danish physicist Hans Christian Ørsted in 1820 when he found that electric currents produce magnetic forces. Soon after, French physicist André-Marie Ampère developed a mathematical formulation (Ampère's law) relating currents to magnetic effects. In 1831 the English experimentalist Michael Faraday discovered electromagnetic induction, in which a moving magnet (more generally, a changing magnetic flux) induces an electric current in a conducting circuit. Faraday's conception of electric and magnetic effects laid the groundwork for Maxwell's equations.

In the early 1860s, Maxwell completed a study of electric and magnetic phenomena. He presented a mathematical formulation in which the values of the electric and magnetic fields at all points in space can be calculated from a knowledge of the sources of the fields, Faraday's electromagnetic induction showed that there is a second source of electric fields—changing magnetic fields. In a significant step in the development of his theory, Maxwell postulated that changing electric fields are sources of magnetic fields(Stark, 2021).

According to faraday theory electromagnetism and Bohr theory for atom model an electric field is the field that surrounds electrically-charged particles and exerts force on all other charged particles in the field, either attracting or repelling them , Electric fields originate from electric charges, or from time-varying magnetic fields. Electric fields and magnetic fields are both manifestations of the electromagnetic force, one of the four of nature.

Electric fields are important in many areas of physics, and are exploited practically in electrical technology. In atomic physics and chemistry, for instance, the electric field is the attractive force holding the atomic nucleus and electrons together in atoms as we said. It is also the force responsible for chemical bonding between atoms that result in molecules.

But does electron has what is called negative charge and proton in nucleus has positive charge and by that invisible charges difference they attract?

If we have rod of glass and rub it with silk it will become positively charged and if we make conductor balloon get near this rod they will attract, is this attraction force is invisible force or it shape throw certain medium?

In our research we will show that this force shapes and flow throw space fabric structure in certain mechanism.

Niels Bohr also explained that the electrons revolve around the atom in specific orbits called energy levels, electron has negative charge and attracted to proton positive charge (Sinch, p.20), but why electrons cannot be stable and rest between these energy levels (orbitals)? And does these attraction force between electron and nucleus is invisible force or not? also if electron has negative charge and proton has positive electron should attract and fall in atom nucleus but that does not happen.

Electrons has two movement in atoms, orbital movement around nucleus and spin movement around its axis, spin movement is a very high speed as physician concluded (Townsend, 2000, p.1), also protons and neutrons consist of elementary particles called quarks each has three quarks, and all quarks has very high-speed spin movement, these quarks are bonded close to each other in nucleus by strong nuclear force (Wu, 2015, p.192).

Magnetic fields are manifestations of electromagnetic forces, they are lines shape around magnets or wire carrying current (Stohr, Sicgmann, 2006, p.41) but does these magnetic fields around piece of magnet or wire are invisible lines, although we watch its direct effect on iron filling or they shape throw certain medium?

Also among the phenomena of electromagnetic forces are electromagnetic waves, which is introduced by Maxwell by manipulation of the four equations for the electric and magnetic fields that led him to wave equations for the fields who said that changing electric field produce changing magnetic fields and changing magnetic fields produce changing electric field and so on we have wave propagating from this mechanism, the emw speed is always constant and equal the famous light speed, emw is propagating oscillations in the strengths of electric and magnetic fields as it is now described, but is this wave generating mechanism is convincing? And why it always has constant speed that does not depend on its source speed?

Electromagnetic radiation is produced whenever a charged particle, such as an electron, changes its velocity or whenever it is accelerated or decelerated. A common example of this phenomenon is the oscillating charge or current in a radio antenna.

If a charged particle interacts with an electromagnetic wave, it experiences a force proportional to the strength of the electric field, as it now illustrated but is it what makes emw move an electron that it has electrical field?

These waves really exist but are they magnetic fields and electrical fields oscillating around each other or there is different shape or complete shape of these natural generated waves that will illustrate all their properties?

Emw carry energy, momentum , angular momentum away from their source particle and has wave pressure and can impart those quantities to matter with which they interact and its speed is always constant(Weinstein, 1988, p.289), a lot of these properties found in mechanical waves like sea and sound waves.

As for gravity force, we find in Newton's theory of gravity, it was believed that gravitational forces are hidden forces of attraction between objects with masses and it does not shape through a medium between them and when the object that makes gravity force disappears, its gravity force disappears instantly (Geroch, 2013).

This theory remained accepted for nearly two hundred years until the beginning of the twentieth century until Physicist Einstein developed the general theory of relativity explaining that the bodies and matter move in fabric he called space time fabric These bodies make curvature in this structure and these curvatures affect matter position with force (Wald, 2010, p.9).

These curves will not disappear instantly if the object that makes it disappear but the construction of space-time, which resembles rubber in some of its properties, such as elasticity, requires time in order to returns to its natural form, and we can say that this curvature in space fabric due presence of objects of matter in it *is the first physical property* of this structure when affected some way with matter.

The second physical property is gravitational waves, as also discovered by Einstein, which are transverse waves such as sea surface waves are formed in the construction of space-time, If a disturbance occurs in its connected parts, like for example, if there are neutron stars with a high density matter revolves around each other both makes big curvature in space fabric, this rotation makes disturbance in the construction of space-time, which results in waves in this construction, and these gravitational waves have been observed and proof of their existence by experiment (Abbott et al., 2016), but is there relation between that fabric or structure and electromagnetic forces?

This physical properties of that fabric indicates that the molecules and building blocks of this structure are connected and extremely rigid more than iron to transmit the movement of transverse waves. But it is a smooth and even structure that is not made of interconnected small particles with spaces and separations between them like ordinary matter but it is like one very big unit, so is it different kind of matter, we will answer that question in our research.

Also in this research, we will have new understanding of special relativity phenomena and it is not time of object that dilate with speed its natural particles speed in matter slowdown as the whole object speed up in space fabric as we will illustrate.

Physician Einstein propose his theory to illustrate reasons for phenomena that light speed is always constant independent of source speed, he propose the time dilation concept, time is not constant its change relative to velocity, when object accelerate its time dilate and slowdown, this phenomena was proven by famous experiment of putting atomic clocks on plane and makes it first fly around earth toward east direction in direction of earth rotation around itself, so this plane will fly in speed larger than earth rotation speed which is 1800km/h, then put different clocks in plane and makes it fly in west direction opposite of earth rotation, that plane will fly in lower speed than earth rotation speed, then they collect all clocks with clocks remain on earth all the time and find that the clocks in the plane that goes dilate or slowdown in time than the clock on earth because it travel faster hence its time dilate and the clocks that travel west in lower speed than earth its time accelerate comparing with clocks on earth as they moves in lower speed (Cocke, 1972, p.168), Einstein illustration that the more object accelerate it time will dilate or slowdown but is time an independent quantity that can accelerate or dilate by itself? we will introduce different illustration for mentioned phenomena.

2. SPACE-TIME FABRIC NEW PHYSICAL PROPERTY

As we said in introduction this structure makes curvature as matter objects move in and can propagate transverse waves so it is kind of medium but is these the only two physical properties between that structure and matter?

From observing from famous physical experiment and phenomena we will illustrate third space time fabric physical property.

2.1. From particle accelerators process

In particle accelerators when particle (electron or proton) accelerated and reach certain speed it need more energy to increase that speed and go faster (Sutton, 2020), as this acceleration process take place in complete vacuum tubes, the electron should be accelerated to very high speed without need to give it more energy and motive force and of course this electron does not gain mass or more protons or neutrons to get heavier to need more energy to increase speed, *this mean that there is something that resist this high speed movement of the particle and that thing is space fabric structure itself, this phenomena is famous in fluid mechanics and called drag force from stationary fluid to moving object in it.*

And this drag force from space fabric structure to accelerated proton the reason the mass of accelerated proton or electron seems to increase 1000 times or more of the rest mass of particle, the more the particle speed increase the more energy it need to increase that speed that mean that space fabric drag force increase with particle speed.

2.2. From motion of rockets in outer space

Same phenomena can be observed on the behavior of rockets in earth outer space where there is no air to resist rocket speed, if the rocket moves in complete vacuum it will need very small motive force for reach high velocity but this not what really happen, the more speed rocket reach the more motive power it need to increase that speed.

The rocket here also face drag force from this creation or structure it moves in (which responsible of gravity force), like when submarine moves in sea it face drag force from sea molecules and when plane move in air faces same opposite force of speed direction, the more speed object reach the more motive power needed to reach higher speed, we can say *this is the third space fabric physical property when dealing with matter, it resists matter movement in it.*

In ultimate speed experiment where electrons have been accelerated by given energy from **0.5Mev** to **15Mev** the speed various from **$2.6 \cdot 10^8$ m/sec** to **$3 \cdot 10^8$ m/sec** (French, A. P. 2017), their speed values have drastic departure from Newtonian mechanics prediction, in Newtonian mechanics the kinetic energy given to body with mass to reach any speed is **$K = 0.5mv^2$** , where **m** is object mass and **v** is its speed, but in that experiment and other when particles accelerated to huge speed that relation does not apply and it the ultimate speed concept begin that the speed of light is the maximum speed, but in our research we said that the more particle speed increase the more it face drag force from space-time fabric

From classic physics drag force

$$FD = 0.5CpAv^2$$

Where **c** is the drag coefficient, **p** is the medium density, **A** is cross section area of particle and **v** is velocity

Here the accelerated particle face drag force from space-time fabric, in low particle velocity this force is negligible but the in high speed, drag force proportion to v^2 and the power needed to overcome this force will be proportional to v^3 , that is why the particles speed does not depend only on the kinetic energy, and this mean that the proton need more energy than electron to reach the same speed as proton area is large than electron.

Also we have in this drag equation that drag force depend on density of space fabric medium, to find ρ the density of space structure, we will first define what is that medium, then we will know hoe electromagnetic force shape throw that medium and we will get exact value of space structure density.

3. SPACE FABRIC DEFINITION

the three physical property we mentioned of what is called now space-time structure make it obvious that it is not vacuum, otherwise it could not be affected with massive object and bend to their center, it could not propagate transverse gravitational waves which need medium with connected particles to propagate and could not resist matter speed. If it is not vacuum then it is kind of matter but this fabric is different from matter we knew it is not made of small particles with separation distance but its smooth and even like whole big connected unit extend for billions of light years distances and it has very large value of elasticity with very low density.

To prove that I start searching about that huge creation in al quran alkareem hoping to find clue that Allah the creator inform us that this space fabric structure is different kind of matter we knew.

I found that Allah said in AlQuran in surat Alnbaa [and built above you seven mighty 'heavens](alnbaa:12) what are these heavens or skies (or asmaa as Allah named it)?

4. DIMENSIONS OF SPACE-TIME FABRIC AND ASMAA STRUCTURE

As we said the space fabric structure contains all stars, galaxies and planets inside its structure, We find in Al Quran Alkareem that asmaa structure also contain all stars as Allah said in surat Assafat [Indeed, We have adorned the lowest heaven (asmaa) with the stars for decoration](Assafat:5). So the lowest heaven (asmaa) contain all stars and galaxies.

[1] Allah also said in surat Fuselat [So He formed the heaven into seven heavens in two Days, assigning to each its mandate. And We adorned the lowest heaven with 'stars like' lamps 'for beauty' and for protection. That is the design of the Almighty, All-Knowing](Fuselat:12) this aya also inform that all stars, planets and galaxies in the lowest sky (asmaa).

[2] Allah also said [Do they not see the birds controlled in the atmosphere of asmaa (the sky)? None holds them up except Allah. Indeed in that are signs for a people who believe](the Bee:79) also earth and its atmosphere is in lowest or first sky.

[3] Allah also said [It is Allah who sends the winds, and they stir the clouds and spread them in the sky (asmaa) however He wills, and He makes them fragments so you see the rain emerge from within them. And when He causes it to fall upon whom He wills of His servants, immediately they rejoice](Alrum:48) so clods spread in asmaa or sky

[4] Allah said [Then, do they not look at what is before them and what is behind them of asmaa (the heaven) and earth? If We should will, We could cause the earth to swallow them or [could] let fall upon them fragments from the sky. Indeed in that is a sign for every servant turning back [to Allah](Sabaa:9)

so heaven or asmaa is in front and behind us and all round us.

Then asmaa structure is exactly space fabric structure from dimensions view that both contain all stars planets...etc. what about creation comparison?

4.1. Creation Of Space-Time Fabric And Asmaa Structure

From facts we said about gravity and general relativity we knew that space fabric is kind of matter but its particles is strongly connected to propagate gravity waves at that huge speed more than iron but it has no separation between these connected building blocks but they are even and smooth like one big unit without holes and separations, but does Allah glory is to him inform us in Alquarn that he created asmaa matter but smoothed and even.

Allah said describing asmaa structure creation in al quran al kareem in surat Alnaziat *[Which is harder to create: you or asmaa (the sky)? He built it (27) He raised it high and makes it even(28)](Alnaziat:27-28).*

And to more understand the word [makes it even] I look for its illustration for famous Quran scientist that knew Arabic language and Quran meaning Mohamed Metwally Alsharawy he said literally in indication the meaning of that verse

[he raised it high: Allah made asmaa high construction and high dimension, makes it even: that Allah built it even so that you cannot perceive the gaps between its building blocks, for it is smooth and leveled as if it were one piece] (¹).

[1] Allah also said in AlQuran in surat Qaf [Have they not then looked at the sky(assma) above them: how We built it and adorned it 'with stars', and it has no gaps] (Qaf:6).

Also scientist Alsharawy says in this aya illustration and I translate from Google translation his words literally [God is grateful that He created asmaa (sky) and built it without gaps and holes, as if it is required that it contain gaps in it, and the gaps are only found in a matter, but here created it smooth] (²).

[2] Allah also said about sky (asmaa) creation in surat Almolk [He is the One' Who created seven heavens, one above the other. You will never see any imperfection in the creation of the Most Compassionate. So look again: do you see any gaps?](almolk:3-4).

From these verses in AlQuran describe assma creation and dimensions we confirm that the sky construction (asmaa) is what is called now space fabric structure, Allah created it a matter and has physical properties like ordinary matter, but Allah created it different than ordinary matter as he leveled it, it has no gabs between its building blocks that we can see in between but its one big unit.

[3] Allah also said in surat Al anbiaa [On that Day We will roll up the heavens like a scroll of writings. Just as We produced the first creation, 'so' shall We reproduce it. That is a promise binding on Us. We truly uphold 'Our promises'!] (Alanbia:104).

God will roll up these huge skies, this mean it is like one connected unit to be rolled

And this construction is matter and has heavy weight, but Allah glory be to him is raising it, if something can grab this structure and make curves in it like black holes this structure tension or heavy will destroy matter like planets.

[4] Allah said [It is Allah Who has raised the heavens(skies) without pillars—as you can see—then established Himself on the Throne. He has subjected the sun and the moon, each orbiting for an appointed term. He conducts the whole affair. He makes the signs clear so that you may be certain of the meeting with your Lord] (Alrad:2).

And quran scientist Alsharawy said in this verse illustration [God is grateful that He, Glory be to Him, raised the heavens without pillars, so It was necessary that it have pillars that raise it, and this indicates that it is material and has weight] (³).

This is scientific miracle in Alquran Alkareem that Allah mentioned this fabric, its dimension and creation from 1400 years ago in his book sent down to his prophet, scientists discovered this creation around only 100 years ago, this prove that Alquran Alkareem is from Allah the creator Glory be to him.

4.2. Space-Time Structure is Asmaa structure

So the space structure which shape gravity force resist matter movement is kind of matter and called asmaa structure, Allah also said in surat Alnaba {And constructed above you seven strong [heavens]}[alnaba:12], we and all galaxies are in the first or lower heaven, so this strong creation control the motion of huge stars and force them to move in certain curves, does not affected by stars heat and it is very high construction that contain billions of stars and galaxies extended for billions of light years and it's only the lower sky.

[1] These stars and black holes from curvature they made in this structure they makes it stable and has no shakings, this result is reached by group of scientist.

¹ Source : <https://www.youtube.com/watch?v=ZgInN7M05Cw> from minute 1.30

² Source : <https://www.youtube.com/watch?v=lz4OseAAuII> from minute 16.15

³ Source: <https://www.youtube.com/watch?v=lz4OseAAuII> from minute 15.12

Allah told us about fact and information in last day or the judgment day the stars will gone, prophet Mohamed said [The stars are a source of security for asmaa (the sky) and when the stars disappear there comes to the sky, i. e. (it meets the same fate) as it has been promised] (Sahih Muslim 2531).

In the quran this fate of asmaa when the stars gone, asmaa will weakened, broke apart, split and sway in strong motion.

[2] Allah said about the day of judgment in surat Alinfitar[When the sky splits open](Alinfitar:1), Allah also said in Alhaqqa about judgment day [asmaa will then be torn(split open) that it will be frail(weak)](Alhaqqa:16), this also mean that now asmaa is tensioned and strong as long as it is connected with no gabs if it got cracked or split open it will be weaken and frail.

[3] Allah also said in surat Altur about the last day [On the Day the heaven will sway with violent motion](Altur:9) this mean also its now stable not shaken like the stars is fixing it, you can imagine an example of sheet of cloth tensioned above earth on extended on 100 km square distance, there will be ripples and movement in middle of that sheet but if we put huge rocks on it separated by certain distances these rocks will stabilize this sheet.

there are more information in Alquran that prove that asmaa structure is space-time fabric, like that that structure is expanding, all these facts indicate that AlQuran Alkarrem is from Allah glory be to him sent down to his last messenger for humans with obvious evidences that this book is from the creator of everything.

So space fabric is not empty but filled with matter, this matter is different from ordinary matter we knew, it does not has gabs, holes or separation distance between its building particles but its even and smooth, and this fabric contain all stars and planets.

Now we will illustrate all electromagnetic forces phenomena based in that fabric space-time is matter with physical properties.

5. PARTICLES MOVEMENT MAKES REAL MECHANICAL WAVES IN SPACE (ASMAA) STRUCTURE

Now we know that space time fabric structure is some kind of matter which has physical properties like matter we knew, in the particles accelerators we said that the accelerated proton or electron face drag force from space fabric structure, *As accelerates particle confront drag force from space (asmaa) fabric structure in opposite direction of acceleration, this mean that the accelerated particle is followed by mechanical wave (or disturbance) in space fabric structure following this particle.*

This wave is a real mechanical wave in that fabric, the more the particle speeds up the more the wave get stronger and bigger.

Electrons have different kind of motion linear in accelerator or orbital around nucleus in atoms and its basic motion the spin movement around its axis.

[1] Each motion has real wave following electron motion in space (asmaa) fabric and wave strength depend on electron speed, the spin movement is very fast, so this movement will make mechanical circular wave or vortex in space (asmaa) fabric structure around the electron coming from the resistance of space fabric structure for this electron circular motion.

[2] If another electron (that also must has circular wave in space fabric due to its spin), come near this first electron the two circular waves around them as they are almost in same size and strength will make the two electron go away from each other by the repulsion or pressure power between these two mechanical circular waves, this is the reason electrons has repulsion force to other electrons and called now electron has negative charge, so electron repulsion force value can be calculated from fluid mechanics laws.

6. ATOMS ENERGY LEVELS (ORBITS) ARE MECHANICAL CIRCULAR WAVES IN SPACE (ASMAA) FABRIC

Atom nucleus contains protons and neutrons each proton and neutron have three elementary particles called quarks, each quark has very fast spin motion around its axis (Britannica Editors, Spin, 2018). so each quark spin generate mechanical circular wave or circular vortex around it in space (asmaa) fabric, and as quarks are very close to each other in nucleus their circular waves repulsion force should make quarks diverge, but due to strong nuclear force which much more stronger than space fabric waves repulsion, *these quarks remain close to each*

other in nucleus and this makes their circular waves will add together making big mechanical circular waves in space fabric structure around nucleus and this is what's called now atom orbits or energy levels.

So atom energy levels which electrons rotate and trapped in is real circular waves in space (asmaa) fabric structure.

[1] If small particle like electron fall in one of these atom circular waves (vortices) it will rotate inside it but it will be trapped in that circular wave and cannot escape, unless electron gain energy and increase its speed to manage to get out of this mechanical circular wave or (energy level), we knew that magnetic fields can trap electrons and we will knew that both same phenomena.

For simplicity we will name circular waves in space fabric structure around atom nucleus due quarks spin atom circular waves or quarks spin circular waves, and we will name electron circular wave due to spin movement electron circular wave in space fabric (space) structure

[2] If this electron gain energy (photon) its speed will increase and escape this atom (quarks spin) circular wave, it will not be stable between atom circular waves as nothing to trap it, unless it hit another or higher atomic vortex that will trap it, also if electron gain higher energy it will has enough speed to get free from these atomic circular waves and become free.

- That is why electron cannot be stable between energy levels and that is also why electron does not fall or attract to nucleus while its in one of atom vortex (there is not attraction directly from proton to electron) but may hit nucleus and leave it and go away from it because it has nothing to attract it toward nucleus only could be trapped in one of that atom vortices.

[3] the more atom has bigger number of quarks (more protons and neutrons) inside nucleus the more atomic waves this atom will have (or energy levels).

7. CHARGES ELECTRIC FIELDS AND ATOMS CHEMICAL BONDS NOT INVISIBLE BUT SHAPED IN SPACE FABRIC

If we have hydrogen atom for example that has one unpaired electron rotate in its quarks spin waves in space fabric, here the electron has two kind of motion, orbital motion which will make a wave in space fabric following electron and its direction will be parallel to that atomic vortex(energy level).

the other electron motion is more important is the spin motion, while orbiting around nucleus, the electron spin will make circular wave in space fabric, this electron spin wave force direction while same time orbiting will be to the attraction from outside to the inside of atom circumference (toward the inside of atom) for near electrons or atom. To imagine that we can apply Fleming right hand rule to imagine the force direction of electron spin circular wave direction while at same time its orbiting around nucleus (Mitchell et al., 2006), by this unpaired electron spin circular wave force the atom will attract near electrons and atoms and this is *known now as that atom is positive charge.*

[1] So atom positive charge or attraction force come from unpaired electrons that rotate in outer atom circular waves (known as energy levels) in space fabric (space fabric) not coming from proton has invisible attraction force as described now, that is why when scientist calculate negative charge of free electron and positive charge of atoms it's the same value because both come from electron spin circular vortex force in space fabric (space fabric).

[2] This hydrogen atom circular wave is not stable in one plane (always vertical or horizontal) but as the quarks that makes that circular wave is rotating in its place, like if in that moment its spin axis vertical the next moment the spin axis will be horizontal and in all three dimensions this make quarks spin circular waves(or energy levels) also rotate in circumference of sphere in very high speed the speed of quarks rotation, this is really observed from electron orbits around nucleus that it orbit itself rotate in sphere circumference and this is mechanical phenomena as we illustrate.

this will make electron inside that wave form like cloud in that sphere as it rotate near light speed in that wave it could reach anywhere fast and its spin vortices attraction will be attraction from all out that sphere to inside of it toward nucleons, for imagine direction force of electron spin wave you can apply fleming right hand role on electron rotate in orbit around nucleons and same time spin around its axis.

[3] If there was near free electron to this atom, this unpaired electron spin circular wave rotating around nucleus will make attraction to this electron spin circular wave (there will be some kind of tension force between two circular waves) as one of them is to attraction direction to inside atom, as the two electron waves has different

direction and pattern, and that makes the free electron move with the attraction of its spin wave and get trapped in that atom circular wave (energy level).

[4] This second electron will take an opposite direction of spin and rotation inside this atom vortex due to repulsion vortices force with first electron, and as it spin and rotate in opposite direction, second electron spin wave force direction will be in direction opposite of the first one and with same vortex power, making the resultant vortex of both electrons in that atomic circular wave is zero and this atom will be stable and has no attraction vortices force in space fabric to near electrons and atoms.

[5] The more unpaired electrons in atom outer mechanical circular waves the more attraction net vortices power this atom has, like in iron atoms (Atkins, 2018), these attraction vortices can attract also spin circular waves of unpaired electrons rotating in near atoms.

[6] this attraction force if it is large enough the first atom could take unpaired electron from second atom, if it is not that large atom will attract unpaired electron that remain connected to its atom and make the two atoms will come near each other and make covalent bonds.

[7] The more both atoms has unpaired electrons the more attraction vortices force they will have as in metals ionic bonds.

So this mechanism that make matter atomic chemical bonding, the more unpaired electrons in atom quarks spin waves the more tension (attraction) force this atom has to near atoms and electrons as all unpaired electron spin waves will be added together for that atom like in iron atoms and ionic bonds, so atomic chemical bonds shape throw space-time fabric(space fabric).

[8] Here we must illustrate important concept in our theory that these circular waves in this space fabric structure is coming from resistance of a very low density, low viscosity and very high rigid medium to matter speed, thus this waves or vortices does not has sufficient power to move particles of matter directly, but this vortices will have effect on other similar vortices that surround another particles either by pressure force (repulsion) or attraction (tension) force and the affected vortices make its particle move with it so it is indirect influence.

[9] if as example we rub rod of glass with silk, the rod of glass will give large number of electrons to silk and this will leave have huge numbers of atoms with unpaired electrons in their atomic outer circular waves, now there are billions of atoms became suddenly with attraction circular waves, these huge number of same wave pattern will add randomly to make big mechanical waves in space fabric fabric around the rod of glass in inside the rod or attraction direction this is called that rod of glass is positively charged.

[10] If another rod of glass with same pattern of vortices in space fabric come near first one, both rods big vortices will repel each other making also their rods repelled.

[11] if metal balloon that has plenty of free electrons, also these huge number of free electrons each has spin circular waves, all these waves will add together randomly making bigger circular waves around balloon but not to inside balloon, if the glass rod come near this metal balloon, here we have different pattern and direction of big circular waves around rod and balloon and they will attract each other.

- If two similar circular vortices pattern come near each other they will repel by vortices pressure force and if different kind of vortices direction one is to inside and one normal the waves to inside will attract the other wave along with their matters like tension force.

[12] The mathematical laws of attraction and repulsion of atoms and electric fields can be driven from fluid mechanics laws, considering these particles as point or sphere of matter revolving in medium like fluid and making circular vortices, and with mutual vortices pressure or tension to each other depending on number of particles generating these vortices we can calculate the repulsion or attraction forces.

[13] If atom circular wave has two electrons in it, the two electron spin waves will make attraction to each other making they strongly connected to that atom or orbit and not easy to be attracted from that atom quarks spin wave.

[14] If atom with one unpaired electron, this electron will has nothing to attract it to that orbit but the trapping force from mechanical circular wave and it will be weakly connected to atom, also the more matter atoms has big number of unpaired electron the more their spin waves will attract each other making this unpaired electrons strongly connected to its orbits

[15] the more atoms has unpaired electron in its quarks spin waves the more this matter will has atomic strong bonding like in solids and iron and the less atoms has unpaired electrons the less stiffness or strong atomic bonding has like copper wire which has one unpaired electron in copper atoms.

8. MAGNETIC FIELDS ARE REAL WAVES IN SPACE FABRIC MATTER

We said that electrons have circular wave in space fabric structure due to its spin motion, In wire of copper for example, enormous number of free electrons founded, all have spin circular waves in space fabric structure around each one, but they move random motion in all direction so all these free electrons circular waves or vortices cannot be add together, but if we put voltage difference across the copper wire this will make current of electrons in wire, all free electrons in wire will move in same direction and pattern, so all their spin circular waves at that moment will add together making bigger circular waves around that wire in space fabric structure and this is *known now as magnetic fields lines around wire with electrical current*.

So magnetic fields coming from adding all free electrons spin vortices in matter making big vortices in space fabric around matter.

[1] If similar wire with electron current comes near the first wire, their circular waves around each wire will make the two wires repel or go away from each other by pressure force of similar size vortices.

[2] Same phenomena occur in piece of magnet where all unpaired electrons in atoms move in similar way and this is natural physical property of permanent magnets, so all that electrons spin waves in space fabric will add together making bigger waves around magnet in space fabric structure and this is the magnetic field lines of magnet.

[3] That is way these circular waves around magnet is always circular or has two poles as natural arrange of electrons pattern the circular waves directions point to outside of part of magnet and waves direction to inter the opposite side or south pole because its coming from electron spin motion, that's why you will never find permanent magnet with only one pole.

[4] If similar piece of magnet come near the first and if their mechanical waves direction was same, both pointing to outside from magnet (north pole) or both pointing inside magnet (south pole), vortices will repel each other and making also their magnet follow their repulsion. if magnet vortices direction was different one to outside and one to inside the vortices will be the same direction and tension or attract each other.

[5] Fleming right hand rule was actually pointing for electrons current direction in wire and at same time point to their spin waves direction.

[6] Earth magnetic fields is also mechanical circular waves in space-time fabric or space fabric structure around earth, coming from adding enormous number of electron spin circular waves as these electrons move in currents similarly inside earth, that is why these waves in space fabric or space fabric around earth protect earth from speeding particles coming from outer space and from solar (Mcpheeron, 2020), because these are mechanical real waves in medium that need particles with sufficient speed to pass not because these particle is charged with invisible charge.

You can imagine earth planet floating in space fabric structure with curvature of space fabric to its center (gravity) along with circular waves in space fabric around it.

8.1. Difference between magnetic and electrical waves

These circular waves around copper wire with current or around magnet is coming from adding enormous number of electrons vortices, so what is called now magnetic fields is exactly the same what is called electric field of atoms or electrons (or rod of glass rubbed by silk), both vortices in space fabric structure (space fabric).

Only different between magnetic vortices and electric vortices that magnetic vortices coming from all adding all electrons spin waves at one time making bigger circular waves much more bigger than single electron spin wave, we will not have circular waves in very small size range (electron wave size), , but electric field is random adding of electrons spin waves due to exist of large number of same electron wave pattern in same matter , this will make different size of circular waves around that matter with big number of waves of each size, and as we will have bigger waves size than electron spin waves we also will have number of circular waves in small size or electron wave size around the rod of glass as example, this will makes electric waves in matter affect small near electrons by attraction or repulsion as this matter has waves in comparable size to electrons waves.

8.2. Understanding phenomena that Stationary electrons affected by electrical waves not magnetic waves

If magnetic field and electric field is same both mechanical waves in space fabric structure why when we put stationary electron in magnetic field does not move and in electric fields moves?

We said these circular vortices does not affect matter directly as they are vortices in very low density medium, but vortices affect other particles vortices with tension(attraction) or pressure (repulsion) as we illustrated, *it is necessary for vortices to affect other vortices with repulsion or attraction to be in comparable or close size to each other.*

So if two electrons near each other their circular waves will repel each other, also if atom with attraction vortex near free electron, their waves will attract as their waves about same size, also if two wires or magnets with comparable size magnetic circular waves they will repel each other or may be attracted if one of these magnetic waves with generated from electrical current in circular wire, its wave direction will be to the inside the center of that circle .

But if we put stationary electron in big magnetic circular waves their waves size has huge difference, they will not repel or attract each other as their waves in not comparable size to affect each other by force, but the electron spin circular vortex will align with the direction of bigger magnetic vortex .

To prove that this stationary electron does not make what is called electric field which is different from magnetic field that electron in and both has same phenomena mechanical circular waves in space fabric but with different wave size, to prove that concept we will give two current examples:

[1] if magnet needle in campus exposed to earth magnetic field, the needle will align with the bigger circular wave in space fabric, here both needle and earth are consider now having what is called magnetic fields although they act exactly as electron in magnetic field which prove that what is called charge of electron is the same phenomena the magnet needle and earth and magnets have mechanical circular vortices in space fabric structure that has certain physical properties.

[2] Also when put magnet in earth outer space, if it come in range of one of earth magnetic lines or waves in space fabric, that small magnet will not be attracted or repelled by that wave only aligned with that bigger wave.

8.3. Understanding phenomena electric and magnetic waves affect moving electrons

If electron moving with certain speed in big circular waves (magnetic wave) in, the electron spin and its spin wave will align with the bigger wave direction, this sudden alignment of electron in direction magnetic vortex as electron moving fast will give electron force in direction of big vortex, this new force on moving electron will depend on electron speed and magnetic vortex intensity and this is Lorentz force:

$$F = qv * B$$

Where q is the amount of charge (which is single electron affection to space fabric by circular wave multiply by all number of electrons), V is the velocity of electrons and B is the magnetite of magnetic field or the strength of magnetic vortices.

[1] By above concept magnetic vortices in space fabric can affect moving free electrons.

[2] if we put wire of copper in magnetic vortices, copper atoms have unpaired electron that weakly connected to atoms, that big magnetic vortices will give these unpaired electron force as they are moving electron(in their orbits) in circular mechanical waves and that force could make them get free from their atomic waves, this will make free electrons current in the wire, that is now known as producing electrical current due to magnetic fields, The more electrons are weakly connected to atoms in matter the more number magnetic vortices can free also its proportional to magnetic waves intensity.

[3] we knew that magnetic field can trap electrons a sin particles accelerators, this happen because these magnetic fields are real mechanical lines and waves in medium, these vortices can trap small electrons and also can trap any small particles like individual atoms, which was proven by experiment that magnetic lines can trap plasma in nuclear fusion reactors (Hazeltine & Meiss, 2003, p.1), in this process magnetic fields can trap plasma not because plasma has invisible charge that affected by invisible force with magnetic fields but plasma is atoms of matter but has not strong connection to other atoms, these atoms has quarks spin circular waves in space fabric that will make atom align and trap in bigger waves or magnetic fields.

[4] Its consider now that the magnetic field produced by current in wire will be zero instantaneously as the electron current that generate them in wire goes to zero, according to our research results this is not true as these are mechanical waves in space fabric structure that that structure will take small time to get its original shape after current of electrons return to random motion.

9. ELECTROMAGNETIC WAVES SHAPE IN SPACE FABRIC MATTER

Professor Maxwell introduce his theory for electromagnetic waves generation that we need oscillating electric field to produce oscillating magnetic field and this oscillating magnetic field will produce oscillating electrical field and so on, this will make electromagnetic wave which contain electric field and magnetic fields and both filed is perpendicular to wave direction.

But this description of that natural phenomena is not complete, it is consider now that particles itself generate that emw but we will illustrate that particles does not generate that waves with that huge speed directly, these waves discovered by professor Heinrich Hertz and is used in many applications due to its natural properties like when it pass by electrons give them kinetic energy, its huge speed, it can penetrate walls and other properties that we mention in introduction part, but does these waves affect electrons and matter with force because electron is charged particle and emw has electric and magnetic field? why its speed always constant?

As we concluded the electrical field and magnetic field is consist of same phenomena they both are mechanical circular waves in space fabric structure so we do not have electric or magnetic fields so what is that emw?

Let us apply our research results to emw generation process to know the whole shape of these natural phenomena.

To produce emw we need oscillating charges in copper wire (antenna), if we have direct electron current moving in wire in certain direction, all electrons spin circular waves will add making big mechanical circular waves around the wire and if we make that electrons current in wire alternative current (current direction change up and down) *the electrons in wire will move or oscillate up and down this will make their circular waves around wire also oscillate up and down and due to space fabric structure (space fabric) natural properties (like huge elasticity and rigid structure) this waves oscillation up and down in space fabric structure will produce mechanical transverse wave in space fabric structure travelling away from that wire with constant natural speed depending only on medium physical properties the famous light speed and the wire in these transvers waves center and waves frequency is the frequency of oscillating electrons up and down.*

[1] This transvers wave is mechanical wave in the structure that the matter flow in space-time structure, if this wave pass by free electron or atoms in matter it will give them kinetic energy up or down with the wave top or bottom and will push free electrons little forward in wave direction and this illustrate why emw has mechanical properties like wave pressure and momentum.

We can imagine this like plastic ball moving up and down in sea surface, due to strong connection between sea surface particles this will make transvers waves.

[2] The same phenomena also occur when an electron is accelerated or decelerated in space fabric structure, its spin circular wave will make disturbance in that rigid structure at moment of acceleration or deceleration generating also this transverse wave in space fabric.

[3] If these mechanical waves come by copper wire they will affect wire atoms and electrons by kinetic force, and if wave strong enough it will free the weakly unpaired electron in copper atoms and make current of electrons in wire, its intensity will be proportion to wave amplitude and that is used in emw receivers.

[4] If these mechanical transverse waves where very strong in amplitude it will give matter atoms big kinetic energy make them strongly vibrate and collide with near atoms in same matter (as matter atoms are connected by strong electrons spin circular waves bond), this atoms vibration and collide generate thermal energy in matter and this is used in microwaves ovens.

[5] So The antenna or electrons do not generate what is known now as emw waves directly by itself but these electrons shake space fabric structure around antenna by their spin waves oscillating and due to this structure properties this shaking make transvers mechanical wave in that medium travelling with constant speed.

[6] These waves is not penetrate throw walls and matter but its transverse waves in the structure that matter move in.

[7] These transvers waves are the same called now gravitational waves in space fabric structure but generating from different distance phenomena in that structure, and has different size.

[8] We knew that matter use space fabric structure to make bonds, so if in iron piece the atoms is strongly connected with small electrons circular waves, so if transverse wave (or emw) come to cross that iron, it has to transfer its waves motion top and bottom throw that part of space fabric inside the iron piece, so it need part space fabric structure inside iron piece to move up with wave top or bottom with the other part in iron piece is still flat (this if transvers wave length is smaller than iron piece), put that part of space fabric is strongly connected and bind with all iron piece, it cannot go up with other part at same time do not going up so this wave will not pass that iron and reflect. If wave size was bigger than iron piece it will pass.

[9] If all our results so far in research are correct then all electromagnetic force calculations can be described mathematically by laws of fluid mechanics.

10. MAXWELL HYPOTHESIS AND THEORY FOR CONCLUDING HIS FAMOUS ELECTROMAGNETIC EQUATIONS

After I finish all my research results of understanding the electromagnetic force phenomena and it shape throw space fabric or space time structure the same fabric that is the reason for gravity force, I found that Maxwell conclude all his famous mathematical equations of electric and magnetic fields, electromagnetic waves and free space constant based on hypothesis which I found matches exactly my research results, in his four part research paper published in 1861 “*on physical lines of force*”

He said after logical observation in first part [We come now to consider the magnetic influence as existing in the form of some kind of pressure or tension, or, more generally, of stress in the medium.] (Maxwell, J. C. (1952), p.3).

then he said in same page [Let us now suppose that the phenomena of magnetism depend on the existence of a tension in the direction of the lines of force, combined with a hydrostatic pressure; or in other words, a pressure greater in the equatorial than in the axial direction: the next question is, what mechanical explanation can we give of this inequality of pressures in a fluid or mobile medium? The explanation which most readily occurs to the mind is that the excess of pressure in the equatorial direction arises from the centrifugal force of vortices or eddies in the medium]

By investigating the effect of magnetic lines in iron filling he conclude they are circular vortices in medium, then he started to drive the mathematical relations of magnetic phenomena from fluid mechanics laws as we expected and it matches experimental laws from Faraday and Ampere relations he said:

[We shall suppose at present that all the vortices in any one part of the field are revolving in the same direction about axes nearly parallel, but that in passing from one part of the field to another, the direction of the axes, the velocity of rotation, and the density of the substance of the vortices are subject to change. We shall investigate the resultant mechanical effect upon an element of the medium, and from the mathematical expression of this resultant we shall deduce the physical character of its different component parts] (Maxwell, J. C. (1952), p.4).

He began drive electromagnetic forces by fluid mechanics laws he said

[In a circular vortex, revolving with uniform angular velocity, if the pressure at the axis is p_0 , that at the circumference will be

$$p_1 = p_0 + \frac{1}{2}pv^2$$

where p is the density and v the velocity at the circumference. The mean pressure parallel to the axis will be

$$p_0 + \frac{1}{4}pv^2 = p_2$$

If the vortices are not circular, and if the angular velocity and the density are not uniform, but vary according to the same law for all the vortices,

$$p_1 - p_2 = Cpv^2$$

where p is the mean density, and C is a numerical quantity depending on the distribution of angular velocity and density in the vortex. In future we shall write $\frac{\mu}{4\pi}$ instead of]

so he express the medium density that vortices shape in (which is density of our medium space-time or space fabric) with **magnetic permeability constant**, Then he conclude all his magnetic and electric equations and the free space constant or (space fabric structure constants) also based on these fluid mechanics laws

This is what exactly we conclude and describe in our research that magnetic fields are circular waves or

$$p_1 - p_2 = \frac{1}{4\pi}\mu v^2,$$

mechanical vortices in medium.

He also said in his third part paper:

[In the first part of this paper I have shown how the forces acting between magnets, electric currents, and matter capable of magnetic induction may be accounted for on the hypothesis of the magnetic field being occupied with innumerable vortices of revolving matter, their axes coinciding with the direction of the magnetic force at every point of the field.

The centrifugal force of these vortices produces pressures distributed in such a way that the final effect is a force identical in direction and magnitude with that which we observe] (Maxwell, J. C. (1952), p.28).

He also said about emw driving its speed formula [By the ordinary method of investigation we know that

$$V = \sqrt{\frac{m}{\rho}}, \quad \text{equation (1)}$$

where m is the coefficient of transverse elasticity, and ρ is the density. By referring to the equations of Part I., it will be seen that if ρ is the density of the matter of the vortices, and μ is the "coefficient of magnetic induction].

He describe the magnetic induction constant (μ) in terms of the density of our medium space fabric (space fabric) and the dielectric constant in terms of elasticity of space fabric and we will use that to get drag force equation from space fabric, after calculating speed of emw he said

[The velocity of transverse undulations in our hypothetical medium, calculated from the electro-magnetic experiments of MM. Kohlrausch and Weber, agrees so exactly with the velocity of light calculated from the optical experiments of M. Fizeau, that we can scarcely avoid the inference that light consists in the transverse undulations of the same medium which is the cause of electric and magnetic phenomena.] (Maxwell, J. C. (1952), p.37).

this is also we conclude that electromagnetic waves shape throw the same medium that cause the magnetic and electric phenomena, I found Maxwell research and read it after I finish all my research results buy some time, there are many different concept of this and Maxwell research, like he consider electrical and magnetic field two different phenomena and he describe electromagnetic waves shape in different way (as magnetic and electrical fields) and his wave generating mechanism also different. In my research we conclude that they are real mechanical transverse waves in same medium that shape gravity force and discovered after Maxwell time in general relativity theory.

He said for the reasons these vortices or magnetic waves generation far away from the electric current wire:

[I have found great difficulty in conceiving of the existence of vortices in a medium, side by side, revolving in the same direction about parallel axes. The contiguous portions of consecutive vortices must be moving in opposite directions; and it is difficult to understand]

[The only conception which has at all aided me in conceiving of this kind of motion is that of the vortices being separated by a layer of particles, revolving each on its own axis in the opposite direction to that of the vortices, so that the contiguous surfaces of the particles and of the vortices have the same motion.

In mechanism, when two wheels are intended to revolve in the same direction, a wheel is placed between] (Maxwell, J. C. (1952), p.13:14)

He understand it that way but the space fabric structure is even and smooth and has no separating particles between its building blocks, we understand it from that space fabric structure physical property that it resist matter speed, this will make mechanical wave follow accelerated particles.

Also we conclude that Emw is transvers mechanical waves in the same medium that shape magnetic and electric phenomena space fabric structure.

By this mathematical equations of Maxwell we prove that our understanding of electromagnetic force that they are mechanical phenomena, and our concepts does ot need mathematical approve, as brilliant professor James Maxwell has already prove them.

11. UNDERSTANDING SPECIAL RELATIVITY PHENOMENA DUE TO SPACE FABRIC DRAG FORCE

Professor Einstein illustrate this phenomena that when object speed increase its time will dilate, so what is this quantity time? Does it independent quantity that dilate or accelerate by itself or its dependent on other factors ?

let us apply our research results so far on the experiment of atomic clocks in planes that we mentioned in introduction in detail to see if we can figure the reasons of that phenomena

[1] the atomic clock internal atoms and electrons has certain natural speed that makes the process of that machine which in that case counting seconds.

[2] *In the plane that travel faster than the clock on earth, all its atoms and electrons movement will have component in that plane travel direction, this will make every moving particle inside that atomic clocks face drag force from space fabric structure due that new speed of clock body, this will make every normal speed of these clock particles decrease and this will make any process that clock does and depending on moving of internal elementary particles dilate (which all matter depend), like in this clock its counting seconds.*

[3] The same will happen if there electron that move in certain speed inside circular tube as example. in that plane with constant energy (but not exactly moving in that tube in same direction of plane), this electron moving in small circular orbit will has speed component in plane direction this will make electron circulation speed decrease as it will face in some parts of its track more drag force from space fabric structure

[4] That plane speed will not increase the electrons speed inside its very small orbits in atomic clocks as they are very small orbits but their speed will decrease as the whole matter speed up in space fabric.

[5] The same thing will happen if human on rocket with big speed, all his moving particles responsible for chemical process (like cells dividing and multiply process) speed will decrease as they will face higher drag force, due to human will take same speed of rocket, this will make him get older slower than human with lower velocity travel in space fabric structure(on earth) as cells dividing and multiplying speed which responsible for aging will decrease as human body speed up in space fabric. Phenomena.

12. SPACE FABRIC DRAG FORCE EQUATIONS

We said in ultimate speed experiment the accelerated electrons face drag force from space fabric structure, this force opposite the kinetic energy the electron has, when speed of the accleratyed electron reach constant value the drag force equal kinetic energy, the drag force is:

$$FD = 0.5Cd\rho Av^2 \quad (2)$$

By substitute from Maxwell equation (1) the speed of transverse waves in space fabric matter, we will write it

$$C = \sqrt{\frac{\epsilon}{\rho}} \quad (3)$$

Where C is the speed of natural transverse waves in space fabric medium and ρ is the density of space fabric structure and equal $\frac{\mu}{4\pi}$, where μ is magnetic permeability of space fabric, ϵ is elasticity of space fabric

structure and Maxwell substitute it by electric permittivity constant, so ρ and ϵ is constants and by substitute from equation (3) in equation (2) :

$$FD = 0.5 Cd \epsilon A \frac{v^2}{c^2} \quad (4)$$

Here we see that drag force from space fabric structure depend on this term $\frac{v^2}{c^2}$, in low speed this term will be very small and drag force will be negligible in high speed this term will be close to 1 and drag force from space fabric to object increase as the elasticity ϵ of space fabric has huge value as we will see.

and this term is the same called now Lorentz factor, which scientist Lorentz discover this term by pure try and error for actual particles speed and theoretical speed depend only on newton laws of dynamics so this term appear to correct the numbers, we now conclude it from different way (physical conclusion) .

So this term is which Lorentz discover is originally come from opposite force affect the accelerated particle, it is drag force from space fabric (space fabric) it self.

In low speed this term $\frac{v^2}{c^2}$ will be small and drag force may be negligible but in high speed this term will be close to 1 and drag force from space fabric to object increase.

By reaching this result the proton will take more energy to accelerate and reach certain high speed in space structure matter than electron, because proton has bigger cross section area than electron.

drag coefficient of sphere (we assume electron has spherical shape)= **0.47**

the elasticity of space fabric E from Maxwell equations, he substitute space fabric density ρ by $\mu/(4\pi)$

μ of space fabric or space fabric= $4\pi * 10^{-7}$ then space fabric density $\rho = 10^{-7}$

we substitute by this value in equation (1) then we get that space fabric elasticity $E = 9 * 10^9$

This drag force coefficient equation may be affect by space fabric high elasticity value.

- also drag force will also affect measured mass of particle, so the rest mass of particle m_0 will be lower than the particle mass after it contract drag force that its value depend on $\frac{v^2}{c^2}$

- in ultimate speed experiment , after accelerated electron reach constant or final speed, here the kinetic energy given to electron will equal the drag force in the opposite direction and in this equation we can get the relation between energy and mass $E = mC^2$.

- the kinetic energy given to electron

$$E = 0.5 m v^2$$

- at electron final speed

$$E = 0.5 m v^2 = 0.5 C d \epsilon A \frac{v^2}{c^2}$$

the term v^2 will cancel each other,

and to maintain the correct unit of energy which is (kg m^2/sec) then the term C^2 has to multiple to both sides and result

$$E = m C^2 = C d \epsilon A$$

- And here we get the famous relation between energy and mass of particle in constant speed or rest mass
- This is the physical origin of that famous law came from the drag force from space fabric or space fabric on the particle will equal the kinetic energy it has.

This is only start for us to consider drag force from space fabric fabric in high speed particles calculations other than the time dilation concept and that the light speed is the ultimate speed.

11.1. special relativity phenomena due to space fabric drag force

- In atomic clock experiment if cesium atoms are used then the second will be duration of 9,192,631,770 periods of waves generated by electron oscillation after transition between two atomic circular waves, the speed of oscillation determine that frequency number, so the additional drag force from plane speed will lower the speed of oscillation of these electrons making electrons to take more than second to make this exact number of periods, so the clock that count the second when counting this number of cycles will seem dilate in time than other lock in earth or stationary clock.

13. WHAT IS LIGHT?

We knew as described now that light is consider electromagnetic wave, that contain electric and magnetic fields and light has dual nature properties, it has waves nature like reflection, refraction and interference with other

waves, and has particle nature it can be described as discrete amount of energy called photons that can be absorbed by matter or emitted by electrons as Einstein discovered in photoelectric effect experiment.

How can this light beams has dual nature wave and particle at same time and what is light ray, as now we do not have electric or magnetic field and we reach that emw is pure mechanical transverse wave in space or space fabric?

To answer that we will first look to the atomic scale of light generation process as described now:

When electron in certain atom energy level absorb photon (energy) it move to higher energy level, and in this new level it remain unstable and vibrate or oscillate until electron emit photon with the speed of light, and then electron return to its first orbit, but what motive force did that electron give the released photon to travel that fast (light speed)?

now let us apply our research results in light generating process:

When electron in certain atom (quarks spin) circular wave gain energy (photon), its speed will increase and get free from that mechanical quark spin circular wave in space fabric structure, then it will hit outer or higher atomic circular wave which makes its speed decelerate and will be trapped in that new wave, then electron will vibrate or oscillate until it release the photon but does it release photon travel in light speed directly? Off course no, this has three different process occur:

1. the excited electron oscillate or vibrate or decelerate in new and higher atomic circular wave and this will make also electron spin wave oscillate in space fabric structure, as we illustrate before this will make several mechanical transverse wave in space fabric structure with very high frequency (the frequency of electron oscillation) and very low amplitude (the distance that electron oscillate in) these cascaded mechanical transverse waves travelling in all direction like circle moving away from that electron with constant speed the known space fabric structure transverse waves speed.

2. At same time this electron oscillate it will lose or emit that portion of energy or photon it absorbed but *it will released photon near electron position in space fabric structure.*

3. *This release photon or energy in space fabric structure will find space fabric structure not flat but find the cascaded transvers mechanical wave generated by electron oscillation in space fabric and these mechanical transverse waves in space fabric structure will carry that photon and transport it along its propagation direction, this is new natural phenomena (that space fabric transverse waves in certain conditions can carry energy).*

Here we have transverse wave in space fabric carrying photon or portion of energy in part of it, that part of the wave contains two separated things mechanical wave in the structure that form gravity force carrying photon, that part of the wave called light.

That is why the photon travel with space fabric transverse waves speed.

[1] That light combination will have both waves properties and photon properties as it consist of two separated thing, this is why experiment scientist found light has dual nature.

[2] If wave with same frequency (not necessary carrying photon also) makes destructive inference with that wave, then the wave will stop and the photon also will stop as the thing that carry it stops.

[3] If that wave with photon hit metal the wave may reflect but the photon will be absorbed and we will not have light only wave

[4] We knew what that mechanical transverse waves can do when pass matter like electrons it exert mechanical force on them, so it is not hard to believe that these waves when pass energy (which is more light than matter), it can carry them along their propagation, but in certain conditions of waves size (like amplitude and wave length) and energy size.

[5] The atomic wave that the electron move from when it absorb photon will have one electron, so it will has net electron spin attraction vortex force to attraction direction and it will attract one of the three electrons in the higher atomic circular wave not necessary the same electron (the electron will not fall by itself to its first orbit)

[6] that is why light waves has duality nature because they consist of two separated objects a wave in space fabric (space fabric) and a photon carried by that wave.

[7] That is also why that light has always constant speed the famous emw speed, its speed of mechanical waves in medium, here we illustrate Michelson-Morley experiment.

[8] That is why the light wave has wave property (like interference, reflection and refraction) and particle property (like abortion by matter).

[9] That also illustrate why light beam transport momentum and exert mechanical force on objects or pressure as it contain mechanical wave in the structure that affect matter position.

[10] To reflect the whole light combination we need to matter that reflect the wave like silver and do not absorb the photon and makes the whole light wave combination reflect.

14. CONCLUSION

We manage in this research to unify the electromagnetic force with gravity force that both shape throw space-time structure and both exist due to different physical properties of interaction between that structure and matter, we illustrate that space fabric is matter but different kind of normal matter we knew and Allah glory to him created it matter without gabs and holes, then we conclude new physical property of space fabric other than discovered in general relativity that it resist matter speed, this will make any accelerated particle in that fabric followed by mechanical wave, the electron spin motion and quarks spin motion will create circular wave around each one in space structure, then we show that repulsion and attraction force of particles and atoms happen because the pressure and attraction between these circular waves around particles, we also show that atoms orbits or energy levels is not imaginary orbits but real circular waves in space fabric, we then show that magnetic fields is real waves in space fabric or space fabric consist of adding enormous number of small vortices of electrons that move in similar way in wire, we then show that electromagnetic waves are mechanical transverse waves in space fabric and they are the same gravitational waves, we then show that Maxwell conclude his electromagnetic equation from the same principles we reach in our research, we show that the special relativity phenomena happen because space fabric resist particles speed this will make speed of particles slow down with the whole object speed increase in space fabric and finally we reach that light consist of dual things combined transverse wave in space fabric carrying photon of energy.

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