Immobility theory

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Philosophy - Physics - Mathematics

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Abstract

The study of time and space categories is the two basic categories of Philosophy - Physics - Mathematics. The manuscript content focuses on the most basic foundations of nature, and has since drawn some great results that we rarely notice, such as:

1. **About Philosophy**
    - Proved the existence of time and non-dilation.
    - Proved that matter is always motionless in space.
    - Conclusion that space is energy.
    - ...
2. **About Mathematics**
    - Solved the squaring the circle problem(a millennium problem).
    - Using the equation to calculate speed of light is 471.000.000 m/s.
    - ...
3. **About Physics**
    - Explained the nature of gravity.
    - Explained dark energy, spin value of Nucleon
    - Explained matter and antimatter
    - ...

In addition, the manuscript content also unifies quantum mechanics and astronomy. The unity of categories in nature(natural Philosophy, Physics, natural Geometry).

Key words: Foundations of Philosophy; Foundations of Physics; Foundations of Geometry.

Contents

1. TIME

At the beginning of the time section, the author uses the logical method to argue, then the manuscript proves that matter is always motionless in space and proves the existence of time.

1.1. ***Methodology***

To analyze the nature of continuous - discontinuous motion of any matter system, the author begins with a statement: "Any motion is only one of the following two states: intermittent motion or continuous motion".

This means if entities such as Earth, Sun, Electron, etc, moves in space then motion properties of these entities are continuous or intermittent. There is no other case because these two properties created a closed logical system.

On the basis of the above statement, the author gradually argues about the logical and illogical properties of motion in nature, specifically as follows:

1.1.1. ***Determining the logical nature***

Assumption:

- The first time, you ran 100 meters in 12 seconds.
- The second time, you ran and rested, so the distance was 100 meters in 20 seconds.
The results based on two runs as follows:
- In the second, you rested(immobile) in 8 seconds when compared to the first.
- your second run is considered an intermittent motion compared to the first.

As such, we can confirm your second run is an intermittent motion. What about the first run? It will be confirmed as an intermittent motion if compared to the running speed of Usain Bolt, who reached the Olympic record with a running time of 100 meters in 9.5 seconds.

Usually, the eyes don't see the interruption in your first run, because motion is interwoven with immobility throughout the process in the most sophisticated way. This is similar to when we observe motion scenes on TIVI, whether the falling motion of goose feathers or motion of the arrow, they are always intermittent motions.

Conclude: The discontinuous motion is logic.

1.1.2. ***Determining the illogical nature***

Assumption:

Suppose that the Moon's motion around the Earth is in continuous motion, and the Earth's motion around the Sun is also in continuous motion. But the speed of the Earth is larger than Moon's speed, so we say that the Earth moves more continuously than the Moon?

The phrase "more continuously than" is difficult to understand. When considering fast-slow speed of motions, we use velocity-quantity to calculate, but velocity- quantity does not determine immobility or continuity of motions, and we only use it as an intermediate quantity to calculate the average or instant speed in object's motion.

Thus, we can say: "The Earth and the Moon are both in intermittent motion, and the Moon's motion is more intermittent than Earth's motion". And the phrase "more continuously than" is meaningless and is valueless.

Conclude: If one object moves more continuously than another, it is a illogical statement.

1.1.3. ***Search continuous motion***

This suggests to us how an object moves at a speed that is considered to be continuous, in which there is no immobility time(unmoving) of the object interwoven in its motion time.

Leading to conclusion: The continuous motion is the speed of motion equal to the maximum speed of the universe(denoted C). Whereas if the object moves at a speed lower than the C constant, it is considered like intermittent motion.

Proof method:

Suppose that there are two objects A and B moving in space, with Va and Vb being the corresponding velocities, and C is the maximum speed of the universe.

To satisfy the motion of A no more continuously than B in all conditions:

$$With : (V_a \geq V_b, \forall V_a, \forall V_b) then :$$
$$\lim_{V_a \to C} V_a - \lim_{V_b \to C} V_b \geq 0$$
$$\rightarrow V_a = V_b = C$$

1.2. ***The relationship between matter and time***

1.2.1. ***The immobility of matter***

Actually verified, the speed of matter is always smaller than the constant C in space, the constant C is the value of the speed limit of all matter.

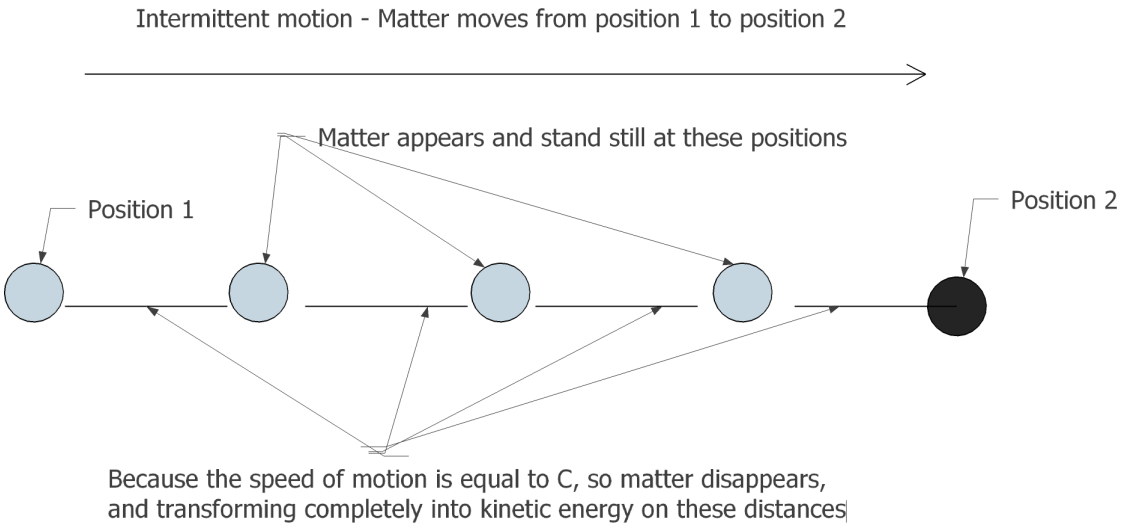
This shows that all matter in the universe is moving intermittently.

We should also note that intermittent motion is a process that includes both immobility and continuous motion, but it is not a pure concept of motion.

This is a very important key to understanding the motion of matter, to satisfy the logical calculations, then result will be as follows:

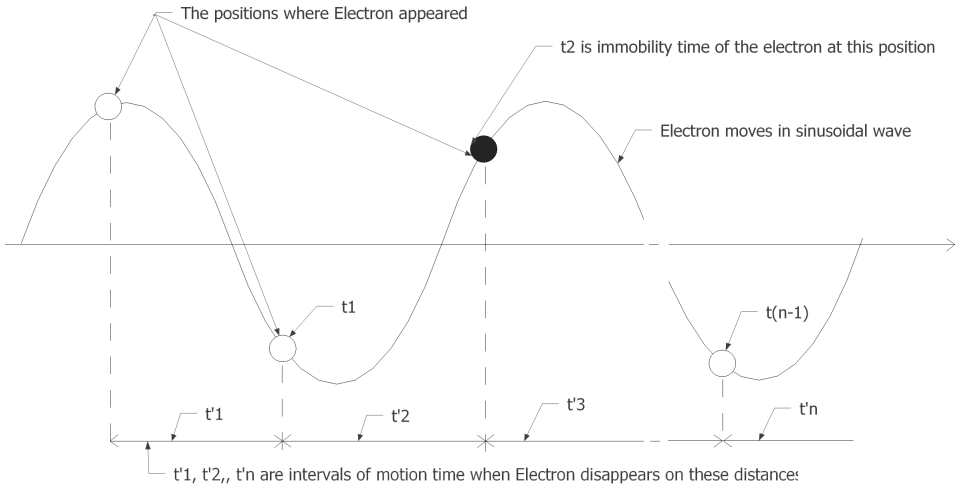
"When the motion occurs, the matter will disappear and be replaced by its energy".

The manuscript illustrates this result in Figure 1:



(Figure 1: Describe the intermittent motion of a matter system)

To explain the above result, we refer to an example when the Electron particle moves in sine wave, and the author will be describe its motion as follows:



(Figure 2: Describing the electron's intermittent motion in Sine wave)

When the Electron particle began to move, it is completely converted from matter to energy (kinetic energy) to move at speed of C, at which time the Electron did not exist - it disappeared for a time equal to t'1. Because average velocity value of the Electron is less than C, so it will appear in a position in sine wave for a time equal to t2. The disappearance and appearance of Electron particle interlaced constantly in its intermittent motion.

Thus, we have both immobility time(denoted **t**) and the motion time(denoted **t'**) of the Electron particle, representing the time(denoted **T**) measures intermittent motion of Electron particle by the equation as follows:

$$T = \sum t + \sum t'$$

In which,

$$\sum t = t_1 + t_2 + +t_n$$

is the total immobility time of the Electron (time to appear), and

$$\sum t' = t'_1 + t'_2 + +t'_n$$

is the total motion time (time to disappear) of the Electron.

Finally, this also refers to the phenomenon of quantum superposition, where the existence and non-existence, the disappearance and appearance of matter are always intertwined in the natural world, this is also mentioned in quantum physics, where the example of Schrodinger's cat is a typical case. In

addition, the process of repetition between appearance and disappearance of matter in intermittent motion also reveals the cause of wave-particle duality in quantum physics(*See also in section (2.1.3)*).

1.2.2. ***Immobility time and motion time***

a.The velocity is inversely proportional to appearance time(immobility time)

Continuing to use the example of intermittent motion of the Electron particle above to analyze the relationship between total immobility time $\sum t$ and total motion time $\sum t'$, when the Electron moves at a speed nearly equal to C constant. Leading to the total motion time will be greater than the total immobility time of the Electron ($\sum t' > \sum t$), and that is represented by the following system of equations:

$$\begin{cases} \sum t' > \sum t \\ T = \sum t + \sum t' \end{cases}$$

Conversely, if the Electron moves as slowly as the speed of a rocket, we will have a new system of equations:

$$\begin{cases} \sum t > \sum t' \\ T = \sum t + \sum t' \end{cases}$$

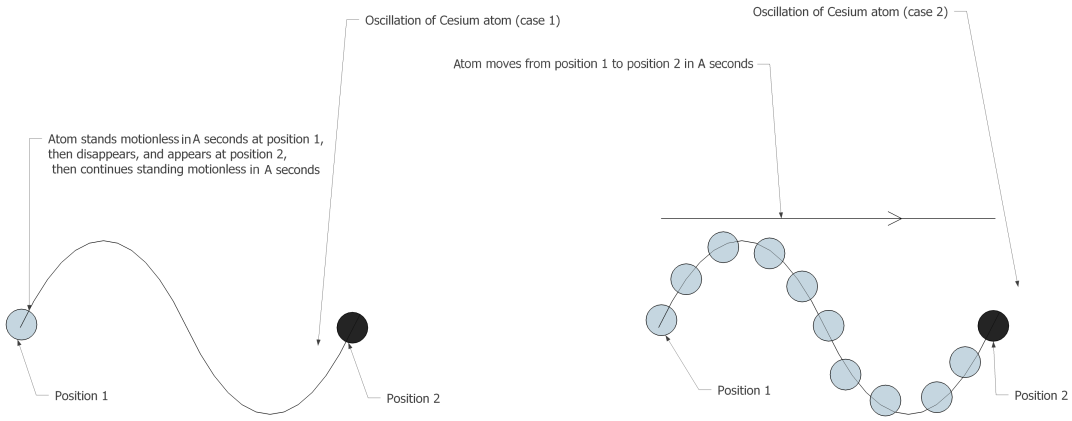
The above system of equations gives a meaning: **The appearance time of a matter system is always inversely proportional to its velocity.**

b. Immobility time is a measure of matter's existence

Suppose we use an atomic clock and measure **T** intermittent motion time value of Electron in the above example. But it should be emphasized that, the atomic clock is using its own immobility time to measure **T** time of the Electron. Because the clock is made of matter, it only measures time when it appears, that is the time in which it exists - that is the time in which it is immobile. The clock does not measure(*no value display*) when it does not exist, if you want to measure time when it disappears, you need to take another clock to measure it.

Take the time value displayed on the cesium atomic clock to explain, the time formed from atomic oscillation cycles, a cycle of about A seconds(A= 1/(9,192,631,770) seconds). If going into detail, there are two cases to understand the time is formed as follows:

Case 1: Cesium atom stands motionless in A seconds at the beginning of the cycle, then disappears, and then appears again at the end of the cycle, continuing to stand motionless in A second.
Case 2: Cesium atom moves from the first position to the end of the cycle in A seconds.



(Figure 3: Illustration of two oscillating cases of Cesium atom)

Regardless of the case, the analysis leads to the conclusion that the time displayed on the clock is the value of its appearance time, because the Cesium atom moves in its intermittent motion if considered in one cycle. When the atom moves (v = C), the time value will not be displayed on the clock itself, because at that time the atom does not exist; when it appears to a new position, the time value displayed on the clock starts to change, ie the clock displays its appearance time value.

This is a logical argument of Philosophy, in addition to this the argument is supported by Godel's theorem and there is verify reality in nature(*Mentioned in section (1.3.2)*).

This was also verified in physics, when scientists used Cesium atomic clocks to verify the theory of general relativity, the results showing different values. Because atomic clocks only record values when they exist, they do not record time when they disappear(motion time).

In section (1.2.1), the manuscript demonstrated that matter is always motionless in space, along with the natural events that we observe, we will now list examples and be re-understood as follows:
- *Electron particle appears at the positions in the atom because it stands still,*

when it moves it disappears. The time of electron's appearance depends on its motion speed, if it moves very fast, its appearance time will be very short.

- A rocket converts matter into energy to help it change its position in space, but the rocket does not disappear in the observer's eyes because its velocity is very slow when compared to C constant, thus immobility time of the rocket takes up almost all of its total time(T).

c. Concept of time

Based on the results presented above, the intermittent motion time of matter systems is always as follows:

$$T = \sum t + \sum t'$$

If the object's velocity(v) varies, leading to the total motion time $\sum t'$ and the total immobility time $\sum t$ of the object also changes, then:

$$\lim_{v \to C} T = \lim_{v \to C} \sum t + \lim_{v \to C} \sum t' = \lim_{v \to C} \sum t' = T$$

$$\lim_{v \to 0} T = \lim_{v \to 0} \sum t + \lim_{v \to 0} \sum t' = \lim_{v \to 0} \sum t = T$$

Result :
$\lim_{v \to C} T = \lim_{v \to 0} T = T$

Simplifying the equation we get:

$$T = t + t' \tag{1}$$

Where:
- ***T*** *is the intermittent motion time of the matter system.*
- ***t*** *is the immobility time of the matter system.*
- ***t'*** *is the motion time of the matter system.*

Finally, T time value is formulated into a the law of conservation of time as follows:

"The time of any matter system is equal to the total motion time of energy along with the immobility time of that matter system."

Note that the above contents refer to the time of matter system, which is local time. The T local time value of the matter system does not depend on velocity and non-dilation, only t time value depends on the immobility of matter; and t' time value depends on the motion of energy.

These are important for reaching the final conclusion about time concept:

The time of the Universe has been proven to exist, independent and immutable(non-dilation). It is the measure of existence of the Universe, it does not depend on matter and on local energy in the Universe. The time of the universe is not a measure of evolution, or immobility.

d. The largest velocity in the universe(C constant)

At present, the C constant is based on the speed of light as a standard, but the light still has the properties of particle and appears as photons for us to observe. So from the point of view of the manuscript, the speed of light is not yet the greatest speed of the Universe(the light is moving intermittently).

It is not possible to directly measure the C constant, so the author proposes an indirect measure as follows:

Take two atomic clocks to experiment, the first one is on the Earth's equator, the second one is higher than the first. Results obtained after a working day, we get the immobility time value **t1** and the distance **S1** of the first clock, and the immobility time value **t2** with the distance **S2** of the second clock. Then the C constant is calculated by the equations:

$$\begin{cases} \Delta_S = S_2 - S_1 \\ \Delta_t = t_1 - t_2 \\ C = \frac{\Delta_S}{\Delta_t} \end{cases}$$

1.3. ***The empirical evidences***

In this section, the manuscript provides empirical evidences for the proven arguments, meaning that matter is immobile in space and the time is determined to exist and non-dilation.

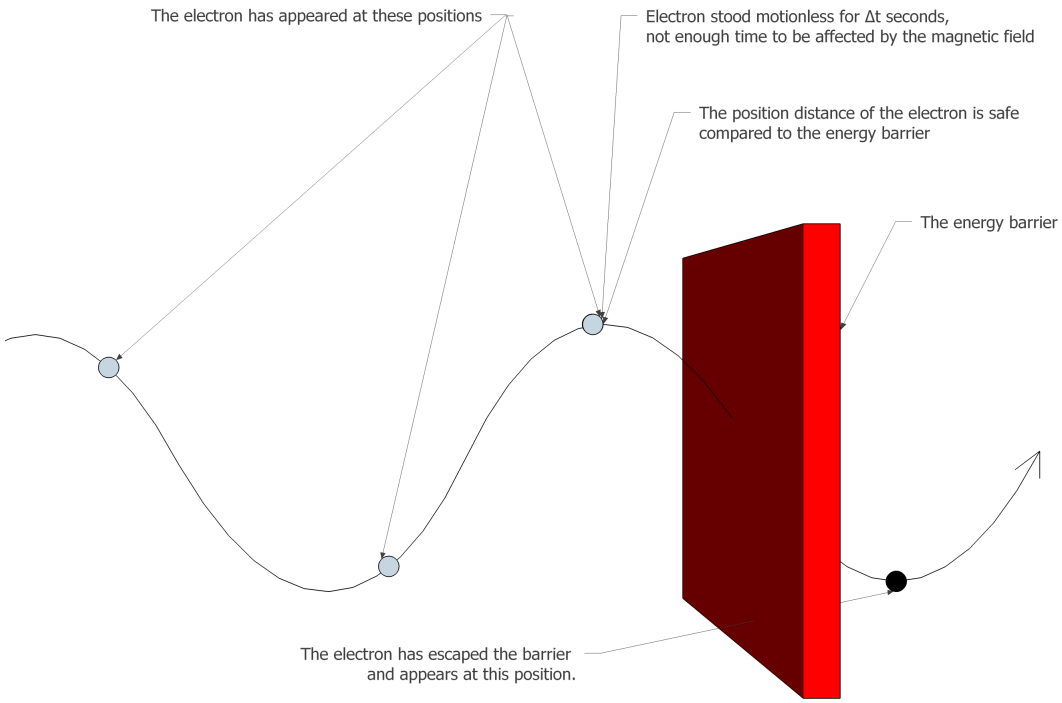
1.3.1. ***Verification of matter disappears when moving***

The empirical evidence: " Quantum tunnelling is the quantum mechanical phenomenon where a subatomic particle passes through a potential barrier " - Reference source Wikipedia

The explanation is based on the manuscript:

When the Electron moves at high speed, Δ_t immobility time also decreased, so the Electron is less affected by impact of the magnetic-field of energy barrier.

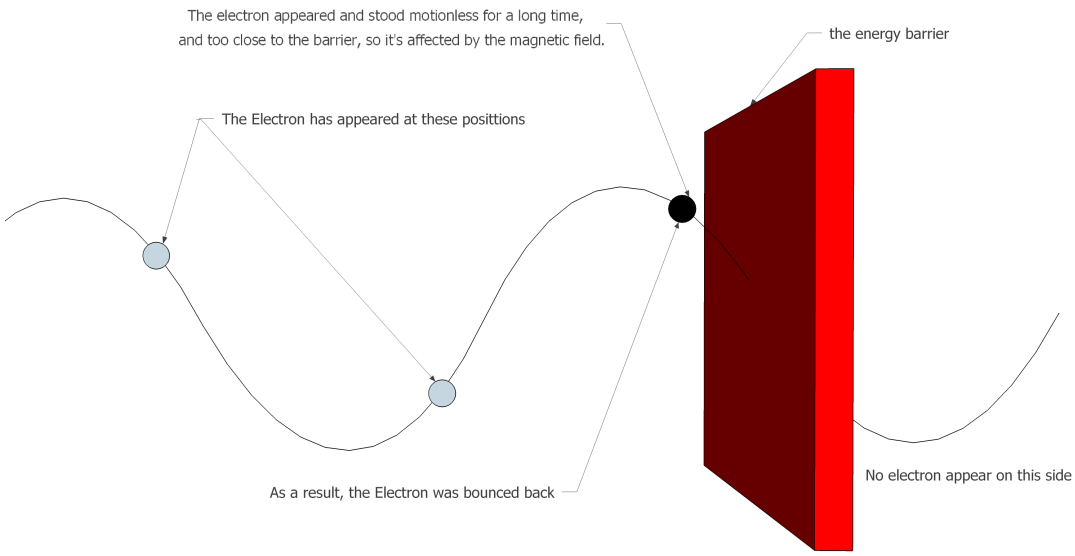
This is the same as having someone throw a fist at you, if you stand there long enough to catch the punch, you will be bounced back. But when the punch has just reached your face, you can escape it, and the impact of the punch on your face is negligible.



(Figure 4: An electron particle escapes the energy barrier)

The Δ_t' motion time causes the electron to disappear enough to move a distance longer than the thickness of the energy barrier, leads to the electron appears on the other side of the barrier. If the energy barrier is designed to be thicker, the electron also need to increase Its velocity further so it can escape.

Conversely, when the velocity of the Electron is not large enough, it can appear very close in front of the energy barrier, and stand motionless at that position with time equal to Δ_t, enough time for magnetic-field of the energy barrier affects its direction of motion, resulting in the electron being bounced back. If you pay attention, you will see that quantum tunneling does not always happen.



(Figure 5: An electron is bounced back by the energy barrier)

1.3.2. ***Verification of immobility time***

The empirical evidence:" Time dilation as predicted by special relativity is often verified by means of particle lifetime experiments. A variety of experiments confirming this effect have been performed both in the atmosphere and in particle accelerators" - Reference source Wikipedia

The explanation is based on the manuscript:

The results of these experiments all lead to conclusion: Object's velocity(kinetics) is the cause of time dilation, It's a change of immobility time value, satisfying the equation(1) has been formulated.
(*See also the appendix outside the manuscript*)

1.4. ***Conclude***

The manuscript finished the time section presentation, summarizing the findings made in this section as follows:
- *Proved that matter is always immovable in space.*
- *Proved the existence of time and non-dilation.*
- *Proved that the speed of light is not the maximum speed in nature(See also section (4.4.3))*

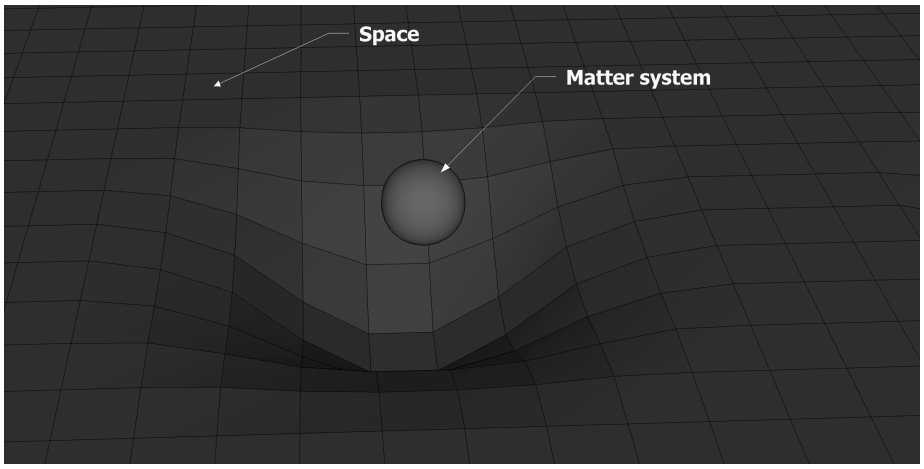
2. SPACE

In this section, the author explores the unique contradiction of classical gravity when applied in space, the gap is sufficient for the manuscript to formulate a new theory unifying quantum mechanics and astronomy.

2.1. ***Methodology***

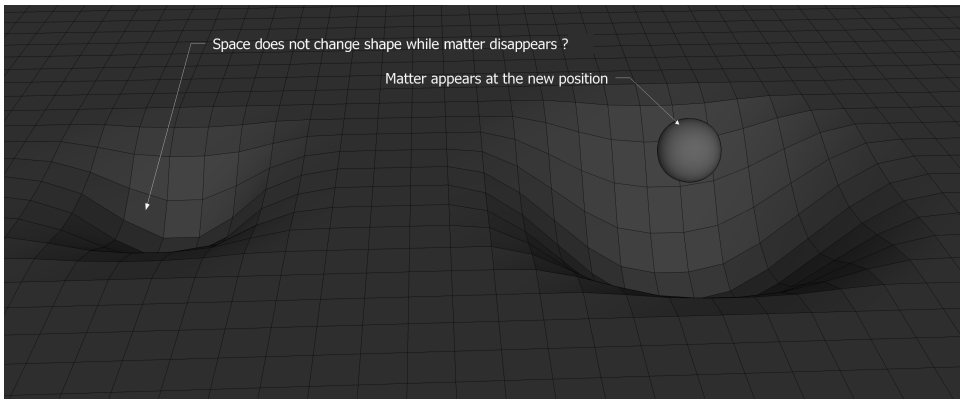
2.1.1. ***Pressure of space***

The empirical evidences in Cosmology have verified the space dilation, such as gravity bends space, gravitational lens, etc.



(Figure 6: Mass of matter bends space)

If the matter system causes space dilation, then when the matter system moves (disappear), does the previous space return to its original shape or remain the same curved shape as before?



(Figure 7: what will the shape of space look like when matter disappears?)

It would be very contradictory to assume that the shape of space is still bent when matter disappears, or there will be some entity filling the recess of space immediately after the disappearance of matter. And which entity will fill the void of Space when matter disappears, moreover, what is that entity, and where did it come from? etc.

To solve these problems, there is one reason to explain that the space has space force which is similar to the pressure. When matter appears, it will occupy a position in space; and then space will put pressure on matter, impact on matter.

This is a logical and decisive argument, the manuscript exploited this point to build up the theory of unity and this theory will be presented shortly.

2.1.2. ***Elementary particle and secondary particle***

At first, we should have a unified perspective on how to name particles in quantum mechanics to assist in the best way to reference the content of the manuscript.

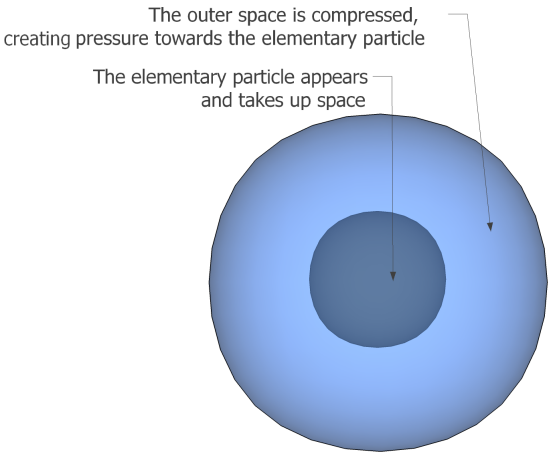
- The elementary particle is the smallest matter particle, and is the basic particle that cannot be divided into other smaller particles

- Secondary particle is a combination of elementary particles; there are many different types of combinations to lead to different secondary particles.

In this manuscript, particles such as Neutrino, Electron, Higgs, .. are regarded as undefined belong to the elementary particle or secondary particle, so they should not be associated with the two concepts above.

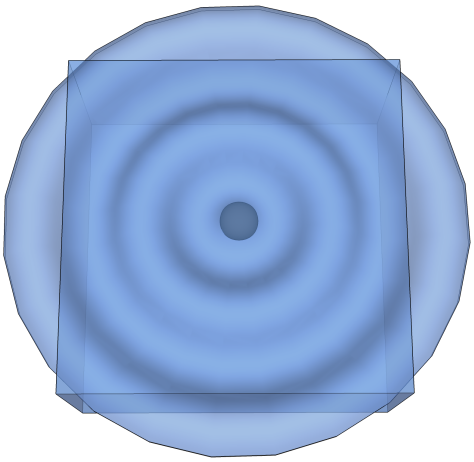
2.1.3. ***Build the theory of elementary particle***

- The elementary particle is the first particle which is created in space. When it is created, it occupy a position in space; and lead to space put a space force(pressure), impacts on elementary particle.



(Figure 8: Space force impacts on the elementary particle)

- When the elementary particle is created, it would move in space. This motion is caused by the impact of space waves(*similar to gravitational waves*) of the large objects. The motion of elementary particle is the process of "appearance - disappearance" continuously, so the particle itself also has its intrinsic space wave.

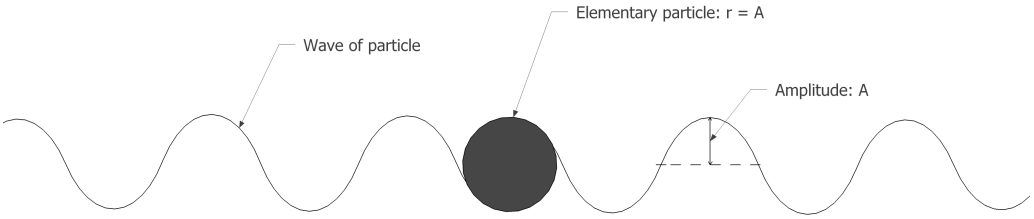


(Figure 9: The elementary particle moves and simultaneously forms its intrinsic space wave)

We should understand that when the elementary particle disappears, space rushes in and fills the void; when the elementary particle appears, the space is turned out. This process is continuous, and lead to the creation of intrinsic space waves for elementary particles. It is also the cause for the creation

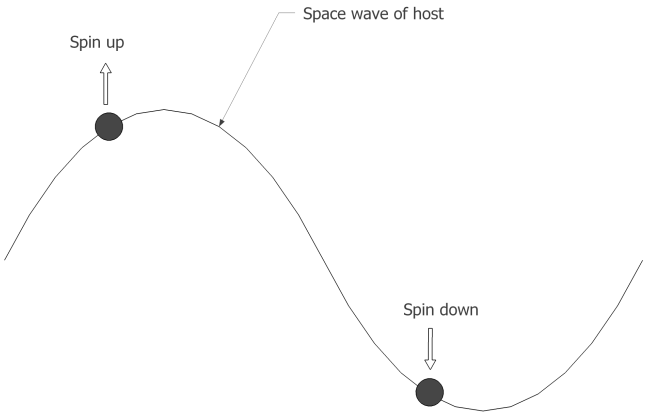
of space wave frequency, such as in a second if the particle has 100 times "appearance - disappearance" then the frequency of the intrinsic space wave is equal to 100Hz.

- The intrinsic space wave of the particle has the amplitude value equal to the radius of the particle. This is an important relationship to calculate the volume of black holes through their space wave amplitude.

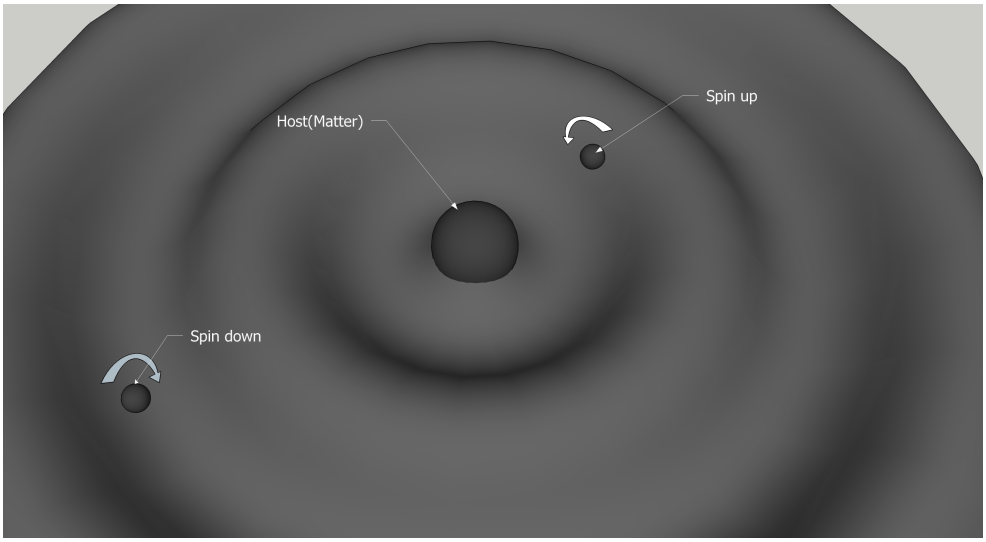


(Figure 10: The radius of the particle is equal to vibration amplitude of intrinsic space wave)

- When the elementary particle appears and moves, it will spin itself. The reason is that space waves of the large objects impact unequally on the two sides of the particle , and the rotation direction(spin up, spin down) of the particle depends on the position of the particle's appearance in protruding area or concave area of dependent space wave.(*Figure 11.1 and 11.2*)



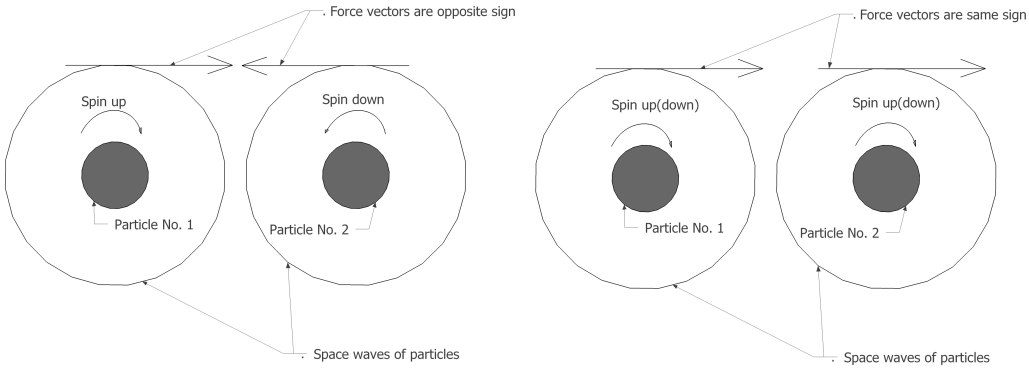
(Figure 11.1: The rotation direction of particles depends on the position of the particle's appearance in the dependent space wave)



(Figure 11.2: The rotation direction of particles depends on the position of the particle's appearance in the dependent space wave)

- The rotation direction(*spin up and spin down*) of one particle is similar to the shift of the charge in alternating current. To understand more about this mechanism, we let turn our hands clockwise, then turn the hand upside down and seeing that the rotation direction has changed(counterclockwise).

- When two elementary particles inside a space are small enough, they will attract each other if the rotation directions are same; or they will repel each other if the rotation directions are different. they attract each other because the spin vectors are in the same direction; they repel each other because the spin vectors are in the opposite direction.(*this content will be discussed in more detail in section (3)*)



(Figure 12: The particles will attract each other if their spin directions are in the same direction; and conversely)

2.1.4. ***Summary***

The manuscript has completed the theoretical part of the elementary particles, summarizing the results obtained as follows:

- The elementary particles have three properties, including space force, intrinsic space wave, and spin direction. In which the spin direction of particle is most noticeable in this manuscript.

- The motion of particles is the nature of electric field in Physics.

- Space wave of particles is the nature of the magnetic field in Physics.

- Wave-particle duality of particles is caused by the disappearance - appearance of particles.

- Suppose that elementary particles are points and they cannot generate intrinsic spin, then elementary particles still have intrinsic space force and they will attract each other to form larger particles and they will have an intrinsic spin because they will no longer be considered as points. Finally, the logic and unity of theory still hold.

2.2. ***The empirical evidences***

In this section, the author provides evidences for the points just stated to prove the accuracy of the theory.

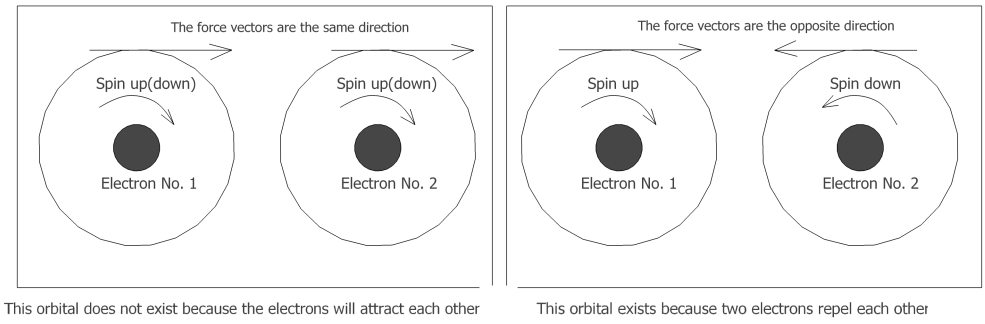
2.2.1. ***The empirical evidences of spin direction***

a. The Pauli exclusion principle

The empirical evidence: "The quantum mechanical principle which states that two or more identical fermions (particles with half-integer spin) cannot occupy the same quantum state within a quantum system simultaneously" - Reference source Wikipedia

The explanation is based on the manuscript:

If two electrons have the same spin direction in an atomic orbital leading to they will attract each other, and we will never see this through verification. This also explains why in an atomic orbital, there are only a maximum of two electrons exist, there cannot be more.



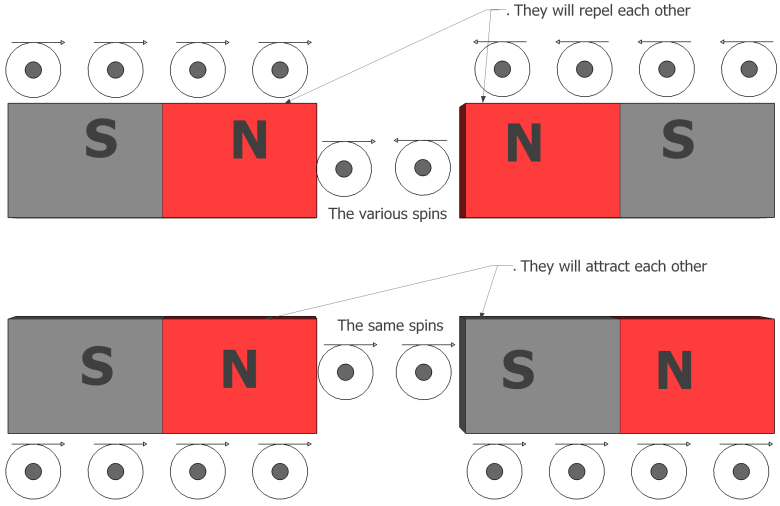
(Figure 13: Two electrons need different spin direction to coexist in an atomic orbital)

b. The two poles of the magnet bar

The empirical evidence: "There are two magnets next to each other, they will push each other if the two poles are the same sign; or they will attract each other if the two poles are different the sign." - Reference source Wikipedia

The explanation is based on the manuscript:

The attraction and repulsive forces of the poles of magnet bars are caused by the magnetic field of the magnet. This is explained by the same spin direction and the different spin direction of the particles inside magnet bars. If the particles inside a bar magnet have the same direction spin, they will attract one another and conversely. This is a different view from what we often think of magnets' poles.



(Figure 14: The particles inside magnet bars with the same spin direction attracting each other; and conversely)

2.2.2. ***The empirical evidences of space force***

In this manuscript, Space force is built to replace Gravity in Physics. It is not a new force but these two forces have different characteristics as follows:

- Space force is the pressure of space impacting on matter, the value of the space force depends on the volume (solid) of matter.

- Gravitation created from the mass of matter, the value of gravity depends on the mass of matter.

These two types of forces are just two different interpretations, but the concept of the mass of matter in Physics is quite abstract. Currently, there are about 7 concepts on Wikipedia but Physics still does not have a unified view of the mass of matter.

3. SECONDARY PARTICLES

This section is also in the space category, but the manuscript separates to focus more on the properties of matter when they are combined.

Also in this section, the unification of quantum mechanics and astronomy is also more evident when analyzing the motion of particles.

3.1. ***Combination of two elementary particles***

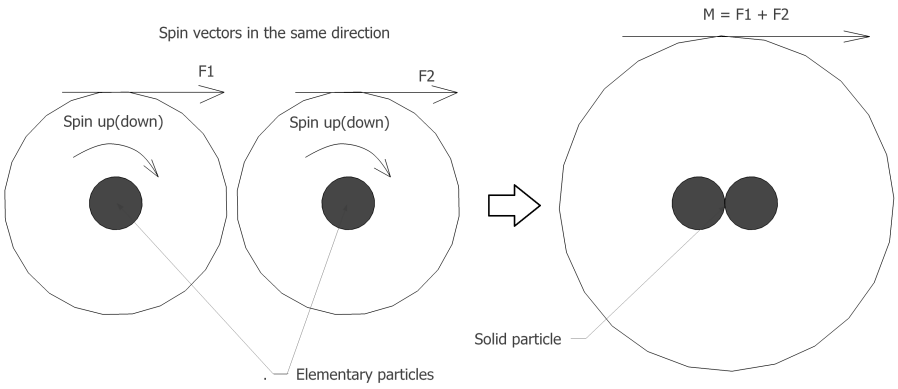
3.1.1. ***Combination theory***

a. Solid particle

When two elementary particles with the same spin direction appear at positions close enough in space, their will attract each other, and they will combine to form a new particle. We named this new particle "**solid particle**", to distinguish it from hollow particles such as Nucleon, etc.

- Combination of spin vectors:

$$\overrightarrow{M} = \overrightarrow{F}_1 + \overrightarrow{F}_2$$



(Figure 15: Solid particle is formed of two elementary particles)

The cohesion force(F') of solid particles is the sum of the space force vector(S)and spin vector(M).

$$\overrightarrow{|F'|} = \left|\overrightarrow{S} + \overrightarrow{M}\right|$$

Note: When analyzing in this case, the author analyzed them without the velocity value and direction of motion of the two elementary particles.

b. Hollow particle

Two elementary particles will combine to form a hollow particle if If the sum of their force vectors is balance when analyzed on the Cartesian coordinate system.

$$\overrightarrow{M} + \overrightarrow{V} + \overrightarrow{S} = 0 \tag{2}$$

Where:

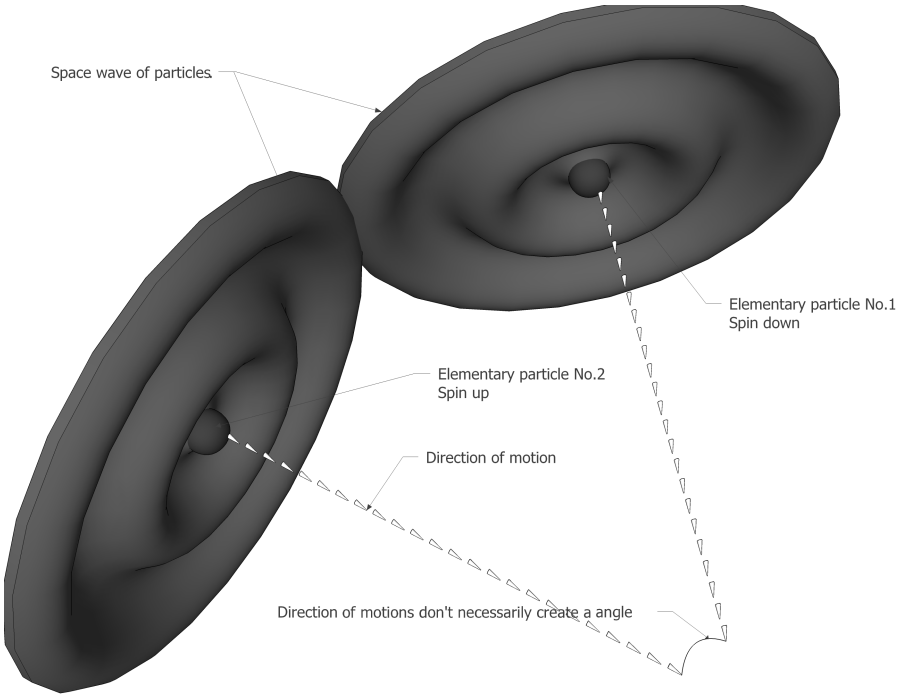
$\overrightarrow{M}$ *is the total spin vectors of two elementary particles.*

$\overrightarrow{S}$ *is the total space force vectors of two elementary particles.*

$\overrightarrow{V}$ *is the total motion vectors of two elementary particles.*

b.1. Analyze two elementary particles with different spin direction

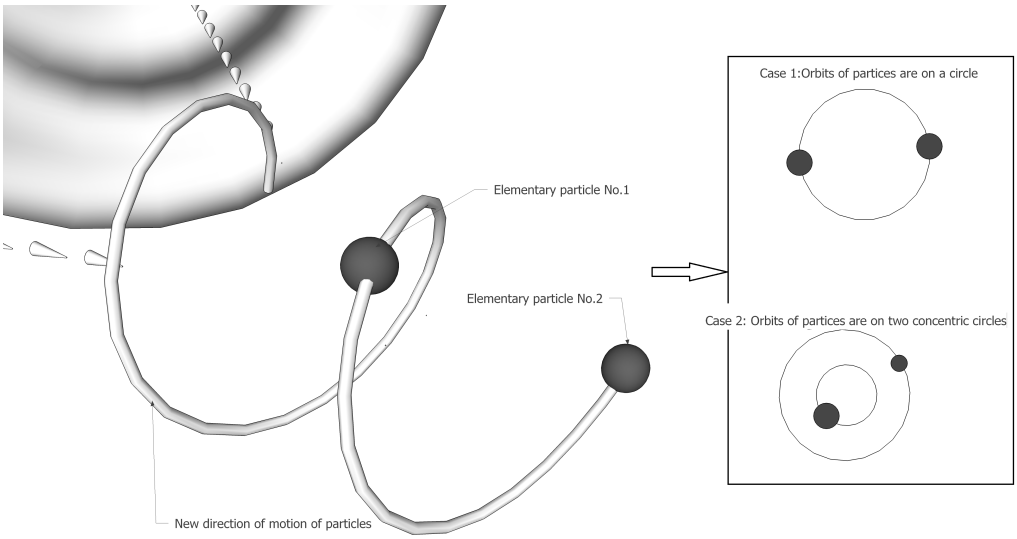
When two elementary particles with different spin direction and moving toward each other, they will collide into, or leave each other, or combine each other. That depends on their values of velocity and spin vectors. Here we only consider the combined cases of the two elementary particles.(*Figure 16.1 and 16.2*).



(Figure 16.1: The two particles have different spin directions, and have the same direction of motion towards a nearby point)

They will combine to form a secondary particle of the hollow type if it satisfies the equation:

$$\left|\overrightarrow{M}\right| = \left|\overrightarrow{V} + \overrightarrow{S}\right| \tag{3}$$



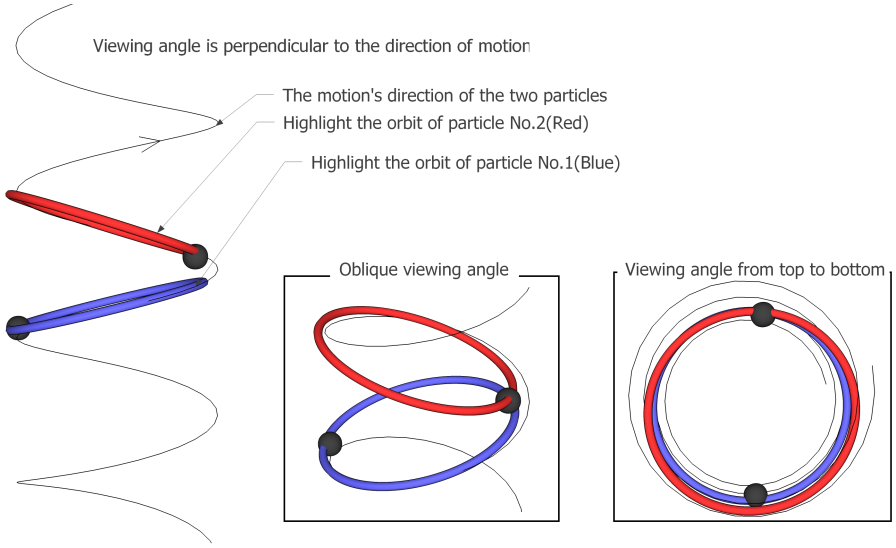
(Figure 16.2: The combination of two particles creates a hollow particle)

At this time, the structure of the hollow particle will be in one of two cases:

- Case 1: The new orbits of two elementary particles are on a concentric circle, this happens if the volume of two particles is equivalent.

- Case 2: The new orbits of two elementary particles are on different but concentric circles, this happens if the volume of two particles is different.

Note that we may get different results depending on the viewing angle, if the viewing angle is a oblique angle then result is two ellipses(figure 17).



(Figure 17: Orbits of particles are based on different viewing angles)

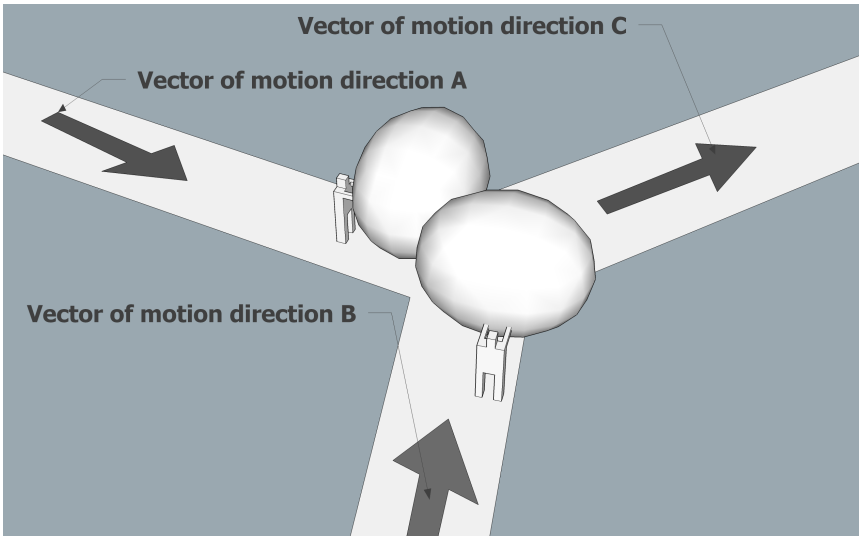
b.2. Analyze two elementary particles with the same spin direction

Two elementary particles with the same spin direction will combine to form a hollow particle when their motion vectors $\overrightarrow{V}$ is in opposite directions(away from each other) and the vector values satisfy the equation:

$$\left|\overrightarrow{V}\right| = \left|\overrightarrow{M} + \overrightarrow{S}\right| \tag{4}$$

This is an important equation so we can explain two stars have the same spin direction and moving in a binary systems, because they are having motion vectors correspond to they are moving in the direction of leaving each other.

For ease of understanding, the author takes an example of two moving objects as shown in figure 18 for prior analysis. Suppose there are two people moving towards each other, where each one is carrying a large ball. And when they collide, the force vectors of both will balance and they move in a new direction together.

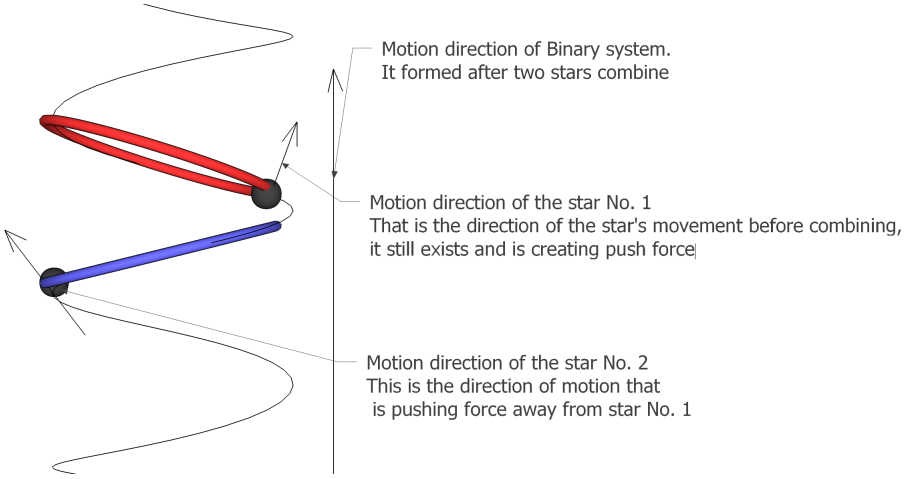


(Figure 18: Describe the new motion direction of two objects)

- In Figure 18, we note that although two people move in the direction of motion vector $\overrightarrow{C}$, but they did not lose the motion vectors value $\overrightarrow{A}$ and $\overrightarrow{B}$. The value of vectors $\overrightarrow{A}$ and $\overrightarrow{B}$ always exist together with $\overrightarrow{C}$, although we do not see two people moving in the directions $\overrightarrow{A}$ and $\overrightarrow{B}$.

- This is similar to the phenomenon of mutual repulsion often seen in sumo sports, this suggests the confinement of the motion vectors $\overrightarrow{A}$ and $\overrightarrow{B}$ inside a new motion system($\overrightarrow{C}$), they are similar to potential energy causes $\overrightarrow{C}$.

Similarly, when two stars have the same spin direction but the motion depends on each other in a binary system, because they are having motion vectors correspond to they are moving in the direction of leaving each other. These are their motion vector values before combining. These vectors always exist and create repulsive forces with other force vectors, lead to two stars are always confined inside a binary system if the vector values satisfy the above equation (4)(Figure 19).



(Figure 19: Two stars with the same spin direction and motion depend on each other inside a binary system)

3.1.2. ***Summary***

a. Solid particle

- Solid particles have very strong cohesion force, the combined equation of solid particles as follows:

$$\overrightarrow{M} + \overrightarrow{V} + \overrightarrow{S} = constant \ \ (with \ \ constant > 0) \tag{5}$$

- The spin value of solid particles is calculated as the sum of two vector spin of elementary particles

b. Hollow particle

- Hollow particles have weaker cohesion force than solid particles, the combined equation of hollow particles is the equation (2).

- If the equation (2)< 0*, the two elementary particles inside the hollow particle are moving apart, leading to the loss of cohesion and the hollow particle will be destroyed by the time. Or they can become a solid particle if equation (2)*> 0*, meaning they tend to move closer together(This will be verified in section (3.2.3)).*

- In addition, the equation (4) is applied to the inertial force, and the equation (3) is applied to the friction force in classical physics.

- The spin vector value of a hollow particle is not calculated according to the sum of two spin vectors of elementary particles.

3.2. ***The empirical evidences***

It is difficult to verify the dependent motion(confinement) cases of two objects in quantum mechanics, because they are very small and their motions are difficult to recognize. So this verification will use the proofs in astronomy to explain, on the one hand giving evidence, on the other hand explaining phenomena in a unified theory between quantum mechanics and astronomy.

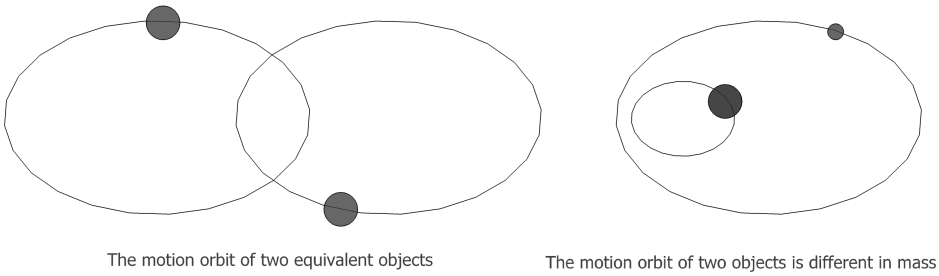
Note: The manuscript lists the evidence to confirm the validity of the theory, and the manuscript does not give specific values to measure the evidences because this is the theoretical physics built as the foundation for modern physics.

3.2.1. ***Two celestial bodies orbit each other***

The empirical evidence:" Science has discovered some binary star systems including two stars orbiting around their common barycenter " - Reference source Wikipedia

The explanation is based on the manuscript:

They are confined by the equilibrium of force vectors according to the equation (2). In most cases, the viewing angle is in the random direction(oblique direction), the resulting image of the orbits of the two stars are the two ellipses as follows.



(Figure 20: The orbital motion of the binary star system follows a random observation angle)

3.2.2. ***Inertial force***

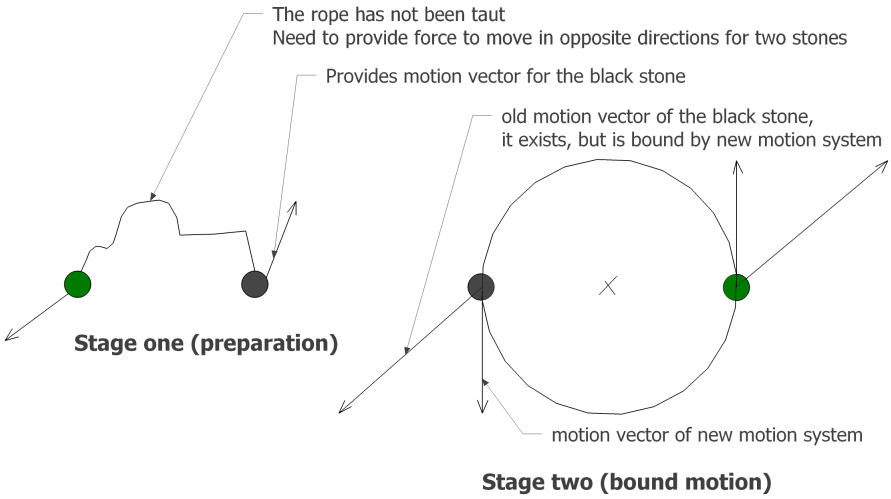
The empirical evidence:" The inertial force, also known as the virtual force, is a force that appears and acts on all masses in a non-inertial reference frame, such as a rotating frame of reference." - Reference source Wikipedia

The explanation is based on the manuscript:

Two objects(stars) are bound and orbiting around in space, because the vector values satisfy the equation (4).

In which the motion vectors of two objects tend to be in the opposite direction and push each other out, but the values of the two vectors are bound in a common motion, resulting in two vectors that appear to be frozen(potential). If the general motion no longer exists, then the motion directions of the two objects tends to correspond to its motion vectors.

Consider an example to see the motion vectors of two objects before combining them into a new motion system. Tie two stones to the ends of a rope, then we spin so that the motion of the two stones is always bound by the rope, and analyzed as follows:



(Figure 21: Two-stage analysis of bound motion)

- First stage: Two stones have not moved because they have not been provided the motion force vectors, then the two stones were provided with forces in opposite directions(repulsive forces). When two stones move at some point, it will be bound by the rope and spin.(figure 21)

- Second Stage: They spin around the middle of the rope. Their movements are bound by the rope, but their old motion vector values remain(similar to the potential energy of two stones).

We should distinguish between the cause force and the result force, the cause force always appears before the result force and exists simultaneously, the result force always depends on the cause force.

In the case of two stones, the space forces is considered to be zero. The manuscript analyzed the inertial force in classical physics in a new way, and the friction force also analyzed the same as above but the objects followed the equation (3).

3.2.3. ***Object's speed when moving in elliptical orbit***

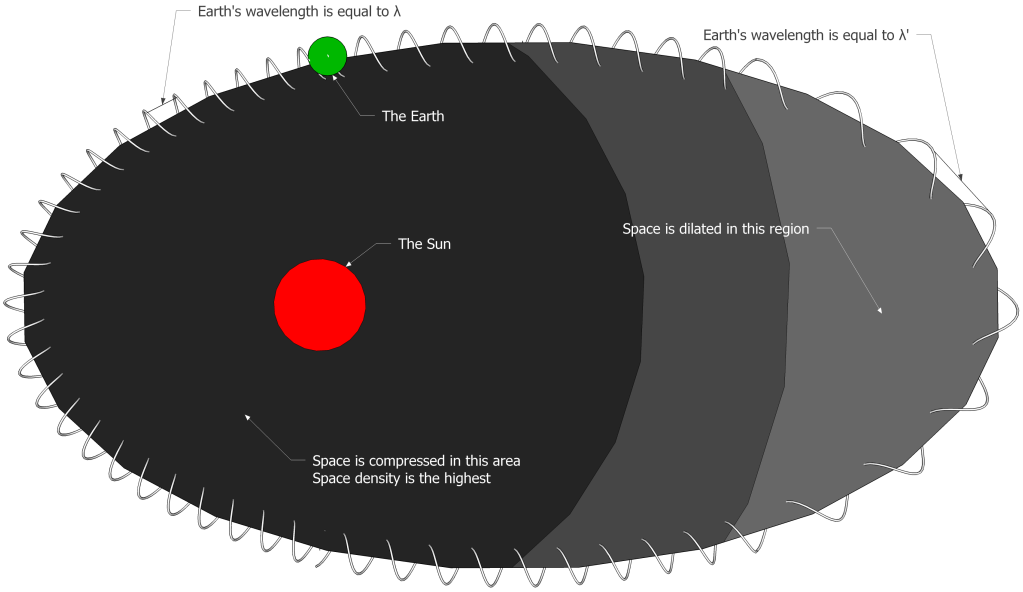
This section explains the compression density of space that affects the speed of the object.

The empirical evidence:" A line joining a planet and the Sun sweeps out equal areas during equal intervals of time." - Reference source Wikipedia

The explanation is based on the manuscript:

The Earth moves around the Sun's orbit in an ellipse, then the speed of the Earth will depend on the distance between the two objects.

Because the area of space around the sun is compressed by the volume of the Sun that takes up space, so the Earth's wavelength will decrease as it enters that compressed space area, meaning that the velocity of the Earth will faster due to decreasing wavelength as it approaches the sun.



(Figure 22: Explain the second law of Kepler)

Note that the Earth's wavelength is generated by a confinement within the motion system of two celestial bodies orbiting each other, the Earth and the Moon(mentioned above). And all objects in space are moving in the sine wave form(See also in section (4.2.3)).

This is similar to the Earth's orbit like a spiral spring wrapped around the sun, the spring parts near the sun are compressed, leading to stronger spring force, results in speed of the Earth's motion faster than elsewhere.

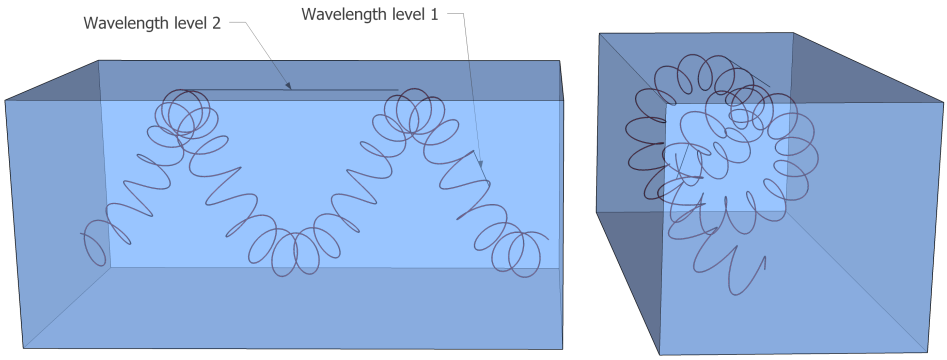
This is also an explanation of why a moving object accelerates when it falls to the Earth, meaning value of space force at a point is measured by the density of space at that point. The greater the density of the space, leading shorter the wavelength of the object when it appears at that position, so the wavelength of the object is proportional to the distance between the object and the Earth(Satisfy the equation(5)).

Expanding on the wavelength of the moving matter systems in space, a matter system with many levels of interlocking waves, for example, if you look at the first wave level of the Earth generated from the Moon then we will have:

- *First wave level: The moon moves around the Earth.*

- *Second wave level: The Earth moves around the Sun.*

- *Third wave level: The Sun moves around the center of the Milky Way.*



(Figure 23: Analyze two wave levels according to motion of the Earth)

For the incomplete listing, the Earth's motion depends on at least three wave levels, corresponding to different wavelength levels. We also should pay attention to the difference between the oscillating wave(*the wave causing the object to fluctuate up and down*) and the moving wave(*which is the wave causing the object's movement speed*), the next section will analyze the oscillating wave.

3.2.4. ***Expansion of the universe***

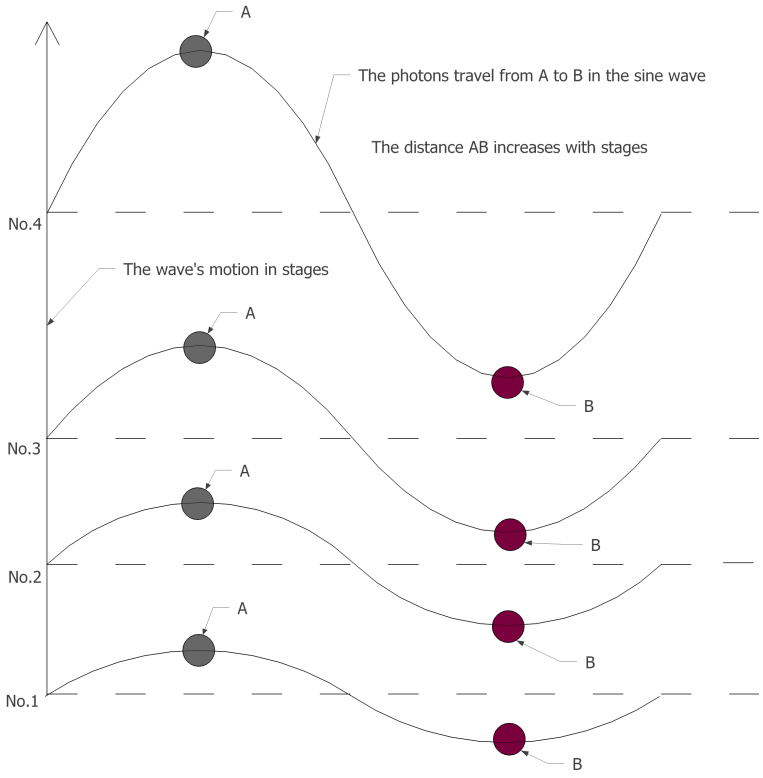
This section explains the oscillating waves and how to form ellipses in the universe.

The empirical evidence:" The expansion of the universe is the increase of the distance between two distant parts of the universe with time. It is an intrinsic expansion whereby the scale of space itself changes." - Reference source Wikipedia

The explanation is based on the manuscript:

This is a property of space waves moving up and down in a cycle, let us refer to the distance of two objects A and B changes in space when they are on the same wave cycle as follows:

As shown in Figure 24.1, the distance AB depends on the wave cycle, they will reach the maximum or minimum distance in a cycle.

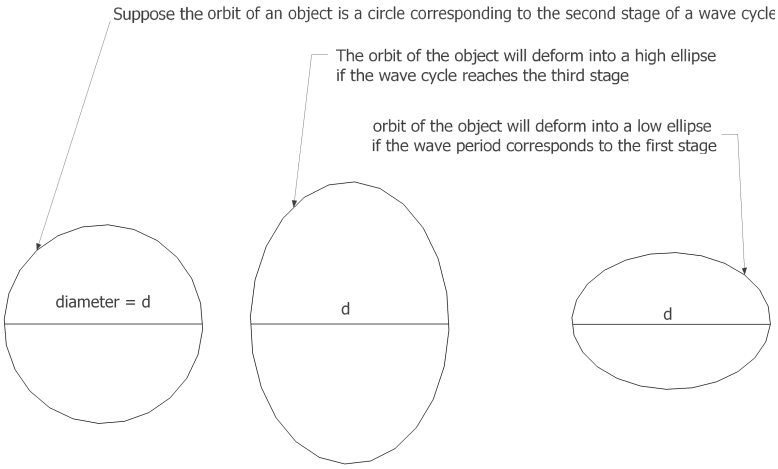


(Figure 24.1: Stages of a space wave cycle)

The same analysis is applied to objects located on different wave cycles, their distances will increase or decrease over time. Photons from distant galaxies

will depend on different levels of waves and many wave cycles to reach Earth. Imagine if a second the distance increased by 1 meter by a wave cycle caused, and if the distance AB is dependent on many cycles, then the expansion will be very fast.

If the distance AB will increase or decrease over time, then a circle will also be deformed over time, meaning that the circle will deform into a high ellipse and then deform to a low ellipse to complete a deformation cycle(*It may not be complete because no one has yet determined how much the largest space wave has an amplitude*).



(Figure 24.2: The shape of the orbit deforms with the stages of the wave cycle)

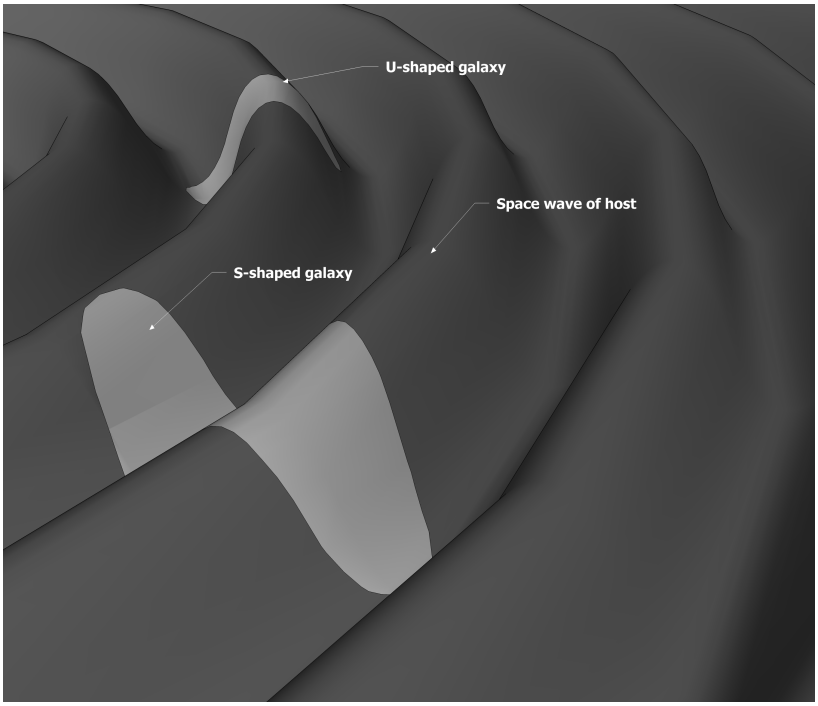
Note: Value of diameter d in figure 24.2 is only meant to recognize the deformation of the circle when lying on space wave.

3.2.5. ***Special shapes of galaxies***

The empirical evidence:"The Milky Way is warping shape, some galaxies are U-shaped or S-Shaped." - Reference source abc.net.au

The explanation is based on the manuscript:

These galaxies are located on the curved regions of space waves, are the levels of space waves to which galaxies are dependent. Depending on the observation position, we see different shapes.



(Figure 25: Special shapes of galaxies)

3.2.6. ***Conclude***

The manuscript only focuses on the proofs presented in theory, so the manuscript avoids explaining issues outside of the scope of discussion*(friction force, classical mechanics)*.

Through empirical evidence, along with simple equations, the manuscript proved the arguments and theories built.

To convert from a theoretical physics to applied physics, appropriate methods of calculation need to be added, and the manuscript has developed a set of curve theoretical maths to be the basis for calculating the wave equations in section (4).

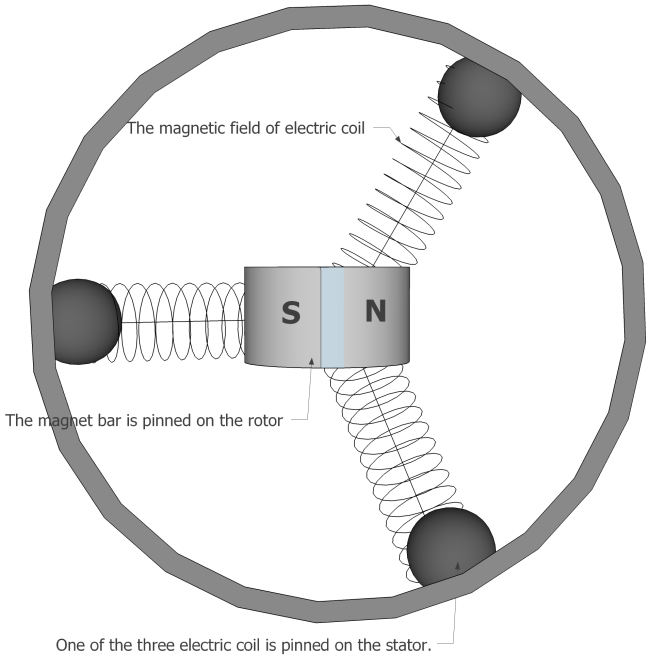
3.3. ***The combination of three elementary particles(Nucleon)***

3.3.1. ***Principle of alternating current***

We need to mention a little knowledge of alternating current, the author summarize how it works:

- There are three electric coils pinned to the Stator in 120 degrees equidistant locations.

- There is a magnet bar pinned to the rotor placed in the middle of the stator.



(Figure 26: Principle of alternating current)

Principles:

- When the rotor rotates, the magnetic field of the magnet bar changes the orbit of the electric charge in the electric coils.(AC generator)

- When the electric charge is applied, the magnetic field of the electric coils act on the magnet bar causing it to move.(AC motor)

These two principles are of the same nature, but in fact we only use one principle to apply at a given time. We never apply both principles to a device at the same time, meaning that with one device, it can both generate AC

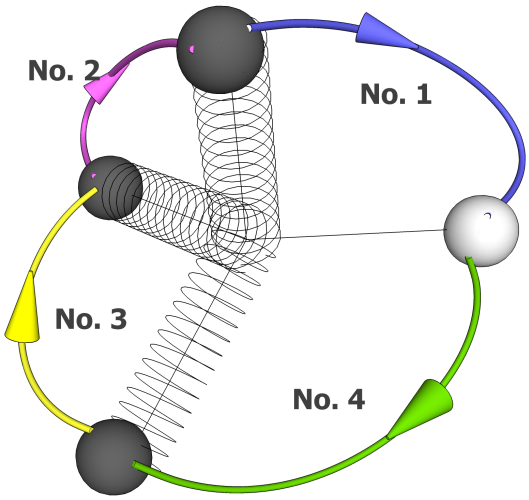
power and function as a motor at the same time.

This is an important key, if we don't pin the three coils to the stator, and there's no magnet bar that pins to the rotor, then we have the nucleon's operating principle, which is the synthesis of the two principles(AC generator and AC motor). In which Quarks are both a charge source(coils) and a magnetic source (magnet bar).

In other words: Quarks will take the form of a rotation according to the principle of AC motor, and it also moves in the principle of AC generator.

3.3.2. ***Nucleon's operating principle***

Nucleon's operating principle is as follows:



(Figure 27: Nucleon's operating principle)

As the three Quarks approach each other in space, the direction of motion is in one direction. At that time, their intrinsic space waves will collide (consonance) with each other to form a new direction of motion, this direction creates a Gluon virtual particle.

- Note that the three Quarks always have two spins in the same direction and one in the other direction to occur the collision, and consider their positions along the two sides of the horizontal axis. This is similar to changing the sign of a electric charge when current flows in the Sine wave.

- The collision of space waves forms a new direction of motion, (applied ac-

cording to the principle of AC motor).

- The appearance of Gluon virtual particle is similar to the appearance of Photon in the radiation.

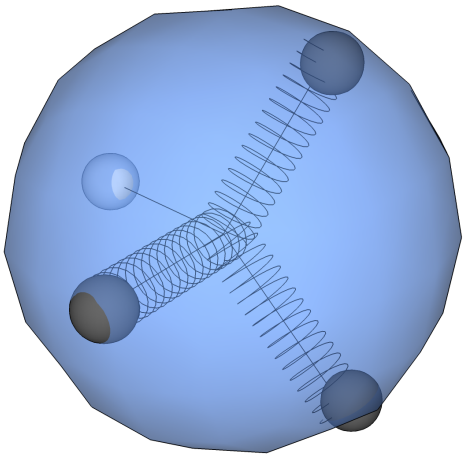
- The motion direction of the three Quarks form 120 degrees equidistant angles in space, which makes the Nucleon structure more durable than other angle values.

When a new direction of motion appears, The space wave at this place will attract a quark particle(No.1) to that position, which is the position of the Gluon virtual particle*(The leaving quark particle may be the particle is nearly out of immobility time).* When the Quark particle moves like that, it disappears completely on its path, because the space inside the Nucleon is relatively small.(applied according to the principle of AC generator)

When the first Quark particle(No.1) appears at the position of the Gluon virtual particle, the collision of space waves again occurs, and this time the Gluon virtual particle appears at the position where the first Quark particle has left off.(Figure 27)

The process alternating motion of Quarks to fill the void of Gluon virtual particle is continuous, Quarks and Gluon appear above and then appear below causing a change in the spin direction(spin up and spin down) of the particles

The mechanism of action of Quarks form a hollow particle with a virtual shell, which is the Nucleon with intrinsic space wave and its spin.



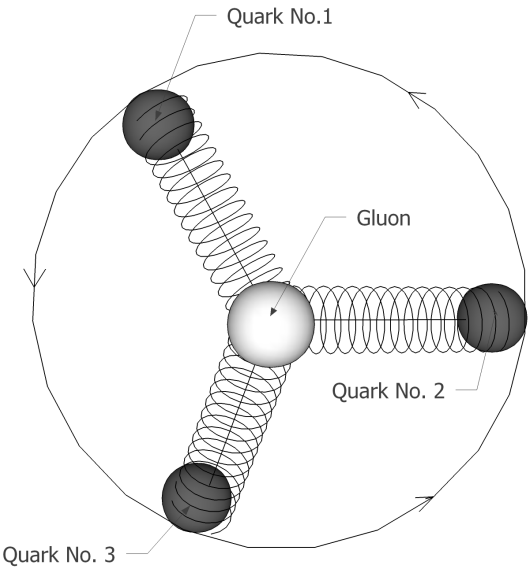
(Figure 28: Nucleon particle is a hollow particle)

Note: Quark has not been identified as a elementary particle, but Nucleon's structure has been verified in particle accelerator, leading to the content of this section taking the combination of the three Quarks to build the theory.

3.3.3. ***Nucleon's structure analysis in two-dimensional space***

This section examines the shell of Nucleon and its spin value, and section also verifies the integrity of the two principles that are applied simultaneously in the Nucleon.

Imagine you are an observer looking at a Nucleon particle, and your gaze always follows a straight line from the Gluon particle to the center of Nucleon. Doing this is to mark the fixed positions of the three Quarks and Gluon like the position of the objects in the AC generator, then analyze it in two-dimensional space.



(Figure 29: Nucleon's structure analysis in two-dimensional space)

The results obtained after the analysis are as follows:

- Quark No. 1 will disappear first, followed by number 2, and finally number 3. This is similar to the phase shift of the three alternating currents.

- We see Quark No.1 appears at the position of Quark No.3, Quark No.3 appears at Quark No.2, and Quark 2 appears at Quark No.1. They move counterclockwise creating a virtual circle(shell of Nucleon), this is similar to the motion of rotor in the AC motor principle.

Through analysis of Nucleon particle in two-dimensional space, we also see that the speed of rotation of the Nucleon(spin value) is not calculated in the form of adding spin vectors as in solid particles, but it is calculated according to angular velocity of Quarks(See also in section 3.3.5).

3.3.4. ***The proofs in quantum mechanics***

a. Anti-Quark and anti-Gluon

The empirical evidence:"Inside a Nucleon, there are always anti-Quarks and anti-Gluons. Quarks and anti-Quarks(Gluons and anti-Gluons) combine and disappear like never existed, this phenomenon named sea of Quarks or sea of Gluons." - Reference source Wikipedia

The explanation is based on the manuscript:

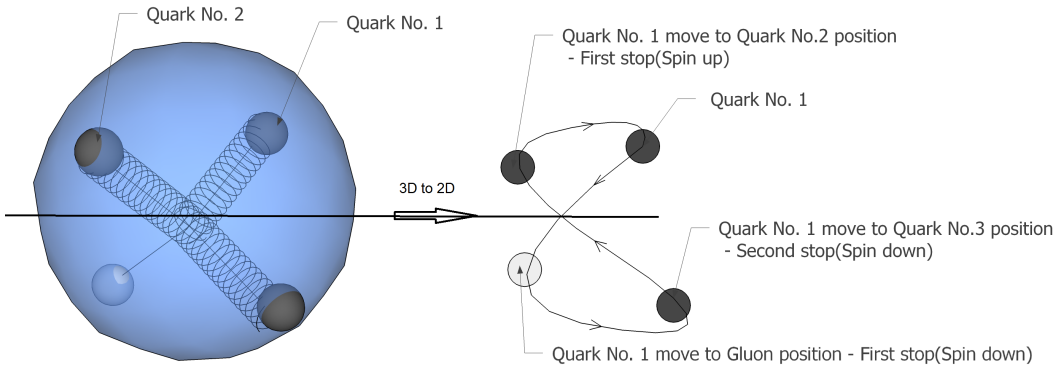
Anti-Quarks, anti-Gluons are only the difference in the spin direction(spin up, spin down) of particles when they appear at a position opposite to the previous ones in the horizontal axis. This is similar to the change of charge in the alternating current.

b. Quarks have a spin of 1/2

The empirical evidence:"A spin of 1/2 means that the particle must be fully rotated twice(through 720 degrees) before it has the same configuration as when it started." - Reference source Wikipedia

The explanation is based on the manuscript:

This manuscript will explain the stopping points of Quark, this means that the quark will appear at the lower two points of the horizontal axis, then at the upper two points of the horizontal axis to complete a cycle. When they appear below the horizontal axis, they will have spin down, and there will be spin up if they appear above the horizontal axis.*(Figure 30 depicts spin 1/2 of Quark No. 1 in two-dimensional space).*



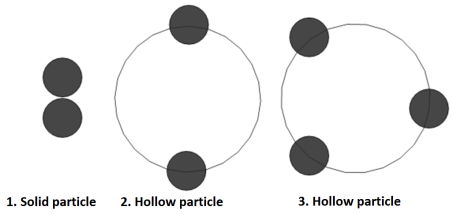
(Figure 30: describe spin 1/2 of Quark No.1 in two-dimensional space)

c. Confinement

The empirical evidence:"The Quarks and Gluons are confined in the hadron, Quarks and gluons cannot be separated from their parent hadron without producing new hadrons." - Reference source Wikipedia

The explanation is based on the manuscript:

The confinement is always present in nature, such as the Earth orbiting the Sun, solid particles, or hollow particles formed from elementary particles as analyzed.



(Figure 31: The confinement of elementary particles forms secondary particles)

If we break the cohesion force of the Quarks inside the Nucleon, then the Nucleon particle will collapse and the Quarks will be free to move and make new cohesion. But we should note that no anti-Quark or Gluon particles will appear after the Nucleon collapse.

3.3.5. ***Conclude***

- The concept of electric charge sign in Physics is essentially the spin direction of particles.

- Matter and anti-Matter are only different in their spin direction.

- The combination of three Quarks in Nucleon forms amplitude for Nucleon, Nucleon amplitude is always greater than Quark amplitude. From the amplitude, we deduce the volume of the Nucleon particle, and we can decipher the phenomenon of excess mass in the Nucleon.

- The strong force in the Nucleon is another name for cohesion force between the three Quarks, it formed from the collision of space waves of three Quarks. When in equilibrium, the cohesion is the most stable, if impacting any Quark (pulling out or pushing inward) will break the principle of resonance, and there will be no anti-Quarks and anti-Gluons reappear.

- The manuscript uses two recognized principles to build a combination of three quarks, the logic of mathematics is still fully applied in this case without the need for mathematical equations. Moreover, if a mathematical equation is formulated to prove sufficiently in this case, it will fall into the case of a problem that cannot be stopped.

- Quarks cannot move in a line to form a triangle or prism, because they are forced to obey the law of curves demonstrated in section (4.2.3).

- Spin value of the Nucleon is calculated according to the speed of rotation around a point (center), but the Nucleon will move in a spiral springs as soon as it is formed, then the distance from the center to the Nucleon will be greater. This leads to the spin value of Nucleon being different from the method of calculating the spin value like solid particles and we should pay attention to this point when calculating the spin value of the Nucleon.(see also the law of curve in section (4.2.3))

- The theory of Nucleon of the manuscript fits the proofs and doesn't violate its uniformity

4. CURVE MATHS

In this section, the manuscript constructs curve mathematics(natural geometry) as the basis for calculating curves, curved area, curved motion,etc. in space.

In classical mathematics there was non-Euclidean geometry to calculate curves and curved motions, but still based on classical geometry as the basis, this means that non-Euclidean geometry still uses the concept of line segment, value of pi number, etc. as a basis for building.

The basic foundations of curve mathematics is completely escaped(independent) from the basic foundations in classical geometry and it is also independent of non-Euclidean geometry.

Classical geometry suggests that pi is a transcendental number, with an indefinite value, but natural geometry(curve mathematics) will prove that pi is a natural number and has a value of 2.

Also in this section, the author temporarily changes the name of the classic geometry into artificial geometry, the author has a bit of intent on such a name change and the intentions will be covered in this section.

4.1. ***Methodology***

4.1.1. ***Methodology***

The manuscript starts with the concept of a circle as the basis for building natural geometry, the methodology is presented in tabular form for easy comparison, then the manuscript explains and proves each point in turn:

	Artificial geometry	**Natural geometry**
1	**Pi** is a transcendental number, with an unknown value	**Pi** is a natural number, with an integer value
2	A line segment is a fundamental concept in classical geometry, it has a definite value	A line segment is a concept that does not exist in nature, it has an unknown value
...	...	...
Result		
n	The solution of the equations to calculate the curve, curved area, wave motion, etc. is an approximate value(probability)	The solution of the equations to calculate the curve, curved area, wave motion, etc. is a more correct value(maybe a specific number)

4.1.2. ***Explain in detail the points***

a. Artificial geometry

The concept of circle in artificial geometry is as follows:

"The concept of a circle is a simple closed shape. It is the set of all points in a plane that are at a given distance from a given point, the centre; equivalently it is the curve traced out by a point that moves in a plane so that its distance from a given point is constant. The distance between any of the points and the centre is called the radius" - Reference source Wikipedia

This is understood as follows:

- Artificial geometry suggests that a line segment is a known distance, this means that line segments exist in nature and they have a definite value - This is an unproven axiom in artificial geometry(This is emphasized because the manuscript has proven that the line does not exist in nature in next section)

- When there is a line segment, then we draw a circle (or an ellipse). This is against the law of nature, because objects in nature always have a curved shape and move in a curve from the beginning(In the next section will prove this point). The artificial geometry states that a line segment is a pre-existing object, an object has a definite value; and a circle is an object that appears after having the line and the circle has an unknown value (because pi is a transcendental number, so the circumference and circle area has an unknown value)

b. Natural geometry

The concept of circle in natural geometry is as follows:

"The concept of a circle is a simple closed shape, it is the set of all points connected on a curved surface, and always have curved diameters that connect two opposite points of the circle and they have equal and constant value."

This is understood as follows:

- Circle is an object available in nature, circumference of the circle is a definite value(not a probability)

- The curved diameter has the property of dividing a circle into two halves with equal area.

- There is no line segment or flat in natural geometry, they are replaced by a curve segment and a curved surface. Suppose to draw a circle in natural geometry, we imagine there was a circle on a paper, then bent that paper, lead to us having created a circle with a curved diameter on a curved surface.

4.2. ***Proving the points in the methodology***

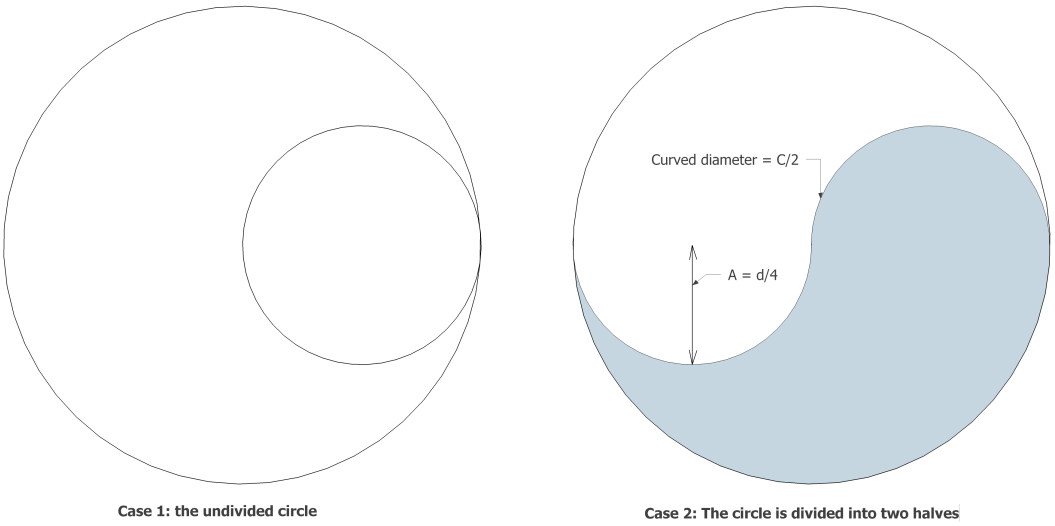
This section proves the points just mentioned, which means this section proves that line segments do not exist in nature. It also proves that the number pi is a natural number, which has a value of 2.

4.2.1. ***Method of proving***

Suppose there is a given circle, whose circumference value is C (with definite value), and the diameter value is d

Because the circumference has a definite value, so it is always possible to create a virtual circle whose circumference value is half the circumference value of the real circle.

The virtual circle has a circumference value of C/2 (defined value), nested within the real circle, as in the first case of figure 32:



(Figure 32: Convert the circumference lengths of the virtual circle into lengths of curved diameter)

The diameter of the virtual circle is equal to d/2 (calculated by the formula C = pi * d)

Divide the circumference value of the virtual circle into two equal curved segments, then arrange the two curved segments according to the second case of figure 32, we will have a curve connecting the two opposite points of the circle. Because this curve divides the circle into two halves of equal

area, and have properties satisfying the concept, so this curve is the curved diameter of the circle.

Thus, the curved diameter has the following values:

- *The lengths of the curved diameter is equal to the circumference of the virtual circle by C/2*

- *The amplitude A of the curved diameter is equal to d/4*

Denoting i is the ratio of the circumference of the circle and the curved diameter, we have:

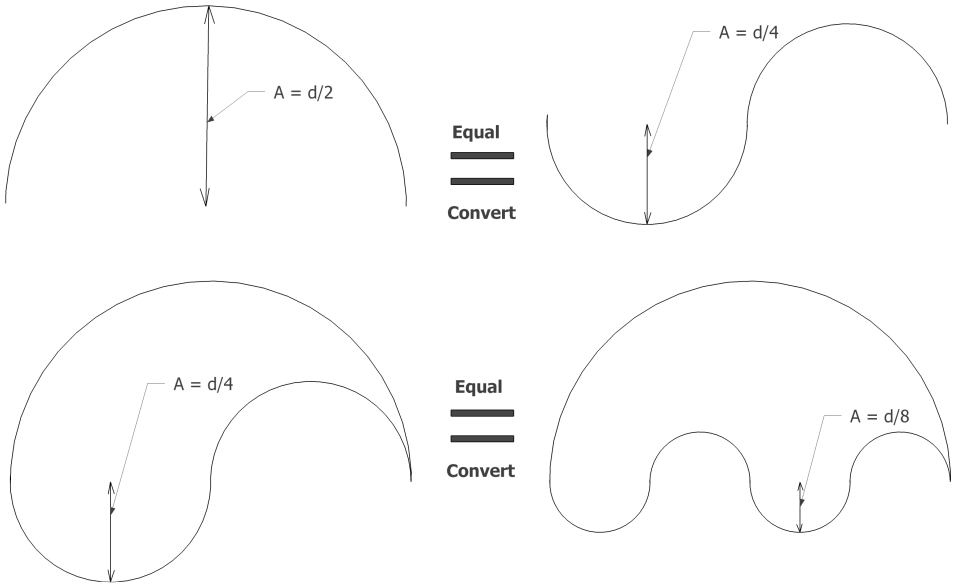
$$i = \frac{\text{circumference value}}{\text{curved diameter value}} = \frac{C}{C/2} = 2$$

The value of i is always a constant and equals to 2, since it is defined as the ratio of circumference and curved diameter, this value is equivalent to the ratio of the circumference of the real circle and the circumference of virtual circle(These are the two given values).

Now the curved diameter is understood as an oscillating wave of amplitude A equal to d/4, and it divides the circle into two parts of equal area (*similar to the straight diameter in artificial geometry that divides the circle into two equal halves*).

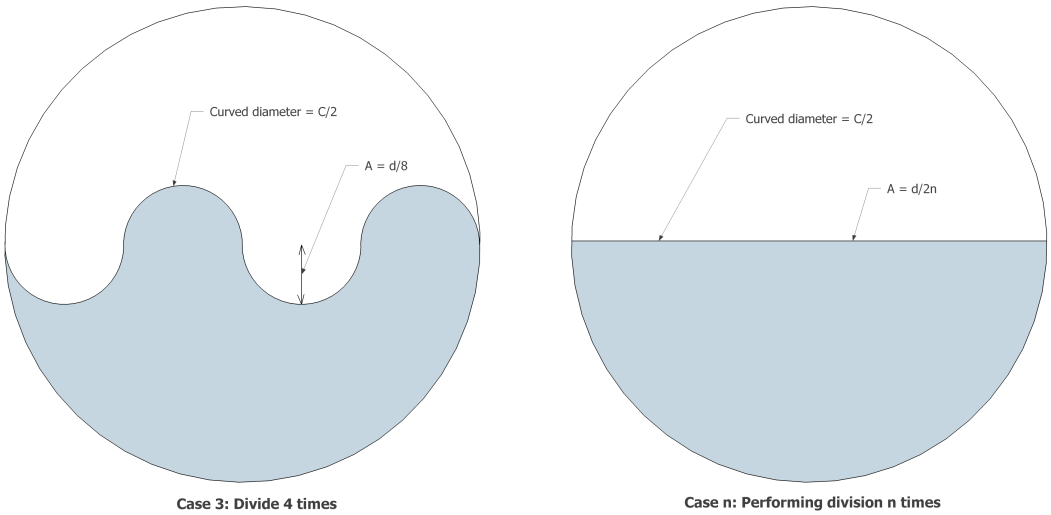
Comment: If we know the value of a curve segment corresponding to half of the circumference then we always have a method to build a curved diameter connecting that curve segment and they have equal value(*figure 33*).

Therefore, there is always a method to divide(convert) the curve segments of a curved diameter into two halves according to the method has been presented.



(Figure 33: Convert a curve to another curve with a smaller amplitude)

Continuing to divide curved diameter by the old method is described as third case in figure 34:



(Figure 34: Convert the curved diameter into straight diameter)

In case 3(*perform division by 2 times*), the value of the curved diameter is as follows:

- The length of the curved diameter remains the same value as C/2

- The amplitude A decreases by half compared to the case 2(perform division by 1 times). Now the value of A is:

$$A = \frac{1}{2} * \frac{d}{4} = (\frac{1}{2})^2 * r$$

Still using the conversion method as above, and dividing up to n times, with n approaching infinity, then we get:

- Curved diameter is a constant value and is equal to C/2

- The amplitude A of the curved diameter is calculated by the formula:

$$A = \lim_{n \to \infty} \left[(\frac{1}{2})^n * r \right] = 0$$

The result is obtained after dividing the curved diameter with n times:

- The curved diameter value is constant and is equal to C/2

- The amplitude value A of curved diameter is equal to 0, means that the curved diameter becomes the straight diameter

- Curved diameters have the form of straight diameter, in other words, straight diameter is the limit for curved diameter to reach, so the straight diameter does not exist in nature and its value is unknown.

- The value of pi is equal to 2, which is a natural number:

$$i = \frac{\text{circumference value}}{\text{curved diameter value}} = 2 = \frac{\text{circumference value}}{\text{straight diameter value}} = pi$$

4.2.2. ***The argument leads to the final result of ascertainment***

In section (4.2.1), we have assumed that the circumference of a circle has a definite value, then we get the result that value of the straight diameter is an indefinite value.

If we assume that the straight diameter has a definite value, then we get the result that the circumference of a circle is an indefinite value(*The result of classical geometry*).

Because the results of these two cases are contradictory. Logically, only one case is allowed to occur in nature, meaning that only one case is true, the other one does not occur in nature(false).

On the other hand, we have always had evidence of curves, curved motion in

nature and there is no evidence of line segment, straight motion in nature. This is very important to the final conclusion: **The line segment does not exist in nature and the value of pi is a natural number and is equal to 2**.

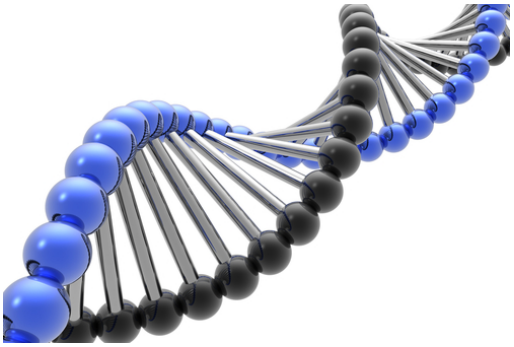
Proving end.

4.2.3. ***The law of curve***

The law is deduced from the result that there is no line segment in space:

"**There do not exist any three contiguous points in space to form a line segment.**"

In order to obey the law of curve, the adjacent points in the space are connected together into spheres or helical shape(*other shapes need the help of a computer*)



(Figure 35: A structure of adjacent points in space)

4.3. ***Explain the value of pi in artificial geometry***

4.3.1. ***Explain***

a. Explain

In Section 4.1.3, it was shown that line segments do not exist in nature, and their value is unknown. But because people from the early days came in contact with curved segments that were considered to be near straight(*earth surface, etc.*), and misunderstand them as line segments. Then, people built geometry theory based on line segment scale to solve problems of flat geometry and straight motion.

Therefore, scale based on line segment is the artificial scale, their values are

different from the natural scale (*curve segment scale*).

And now, we should look back at the manuscript-proven results, then ponder a little, about five minutes. Then think about the ratio of inches and centimeters, GBP and USD... and then ... **the ratio of curves and lines.**

There is always a constant α that converts the curve segment into the line segment and vice versa. The constant α is the converted value of two scales, the method of calculating α is as follows:

$$\alpha = \frac{\text{curved diameter value}}{\text{straight diameter value}} = \frac{C/2}{d} = \frac{1}{2} * \frac{C}{d} = \frac{\pi}{2}$$

b. Conclude

In fact, there are two different scales, the curve scale represents the natural scale and the linear scale represents the artificial scale. The converted value of these two scales is equal to $\alpha = \frac{\pi}{2}$

4.4. ***Applications of converted value*** α

The constant α is used a lot in curve mathematics, the manuscript will list some specific cases as follows:

4.4.1. ***Application in line segments and curve segments***

There is a line segment equal to d (*artificial scale*), which always calculates the value c of a curve segment corresponding to it(*natural scale*).

$$c = d * \frac{\pi}{2}$$

From the constant α in the above expression, we see two closely related scales, such as the circumference of a circle:

$$2 * c = 2 * d * \frac{\pi}{2} = \pi d = C = i * c$$

Meaning: Using natural scale to calculate the value of curves is much simpler when compared to artificial scale. In addition, the solution of the curve equations is a true value (not a probability).

4.4.2. ***Application in cubic geometry***

In artificial geometry, we need to know the value of the line segment first, then we can calculate the area or volume of the shapes(polygons).

But for now, we'll get used to the opposite. This means that we already know the value of the curve(*value of circumference*) and calculate the area or volume of the spheres(*not related to line segments value*) on the natural scale.

- Calculate the area of a circle on the natural scale, when the value of the circumference is known in advance:

$$S = i * (\frac{C}{4})^2 = \frac{1}{2} * (\frac{C}{2})^2$$

(Comment: The error value in the expression for area is equal to $\alpha = \frac{\pi}{2}$*)*

- Calculate the sphere volume on the natural scale:

$$V = \frac{4}{3} * i * (\frac{C}{4})^3 = \frac{1}{3} * (\frac{C}{2})^3$$

(Comment: The error value in the expression for volume is equal to $\left(\frac{\pi}{2}\right)^2$*)*

Meaning: If using the artificial scale results in an error value, the error value will be expanded if it is a solution of a complex expression.

In addition, we also apply the natural scale to calculate the area or volume of cylinder, cone, and any shape related to curve. If only the curve is involved, then the solution of the equation gives absolute value.

The superiority of the natural scale is also shown when the manuscript solves the Squaring the circle problem(a millennium problem). The solution method is as follows:

Topic:

"Constructing a square with the same area as a given circle by using only a finite number of steps with compass and straightedge". - Reference source Wikipedia

Solution method:

Because the circle is given, so its area is a definite value on the natural scale.

$$S = \frac{1}{2} * (\frac{C}{2})^2$$

The area of a square is equal to the area of a given circle, so the value of one side(a) of the square is calculated by the expression:

$$a = \sqrt{S} = \sqrt{\frac{1}{2} * (\frac{C}{2})^{2}} = \sqrt{\frac{1}{2}} * \frac{C}{2}$$

It should be noted that on the natural scale, the value of C is a definite value, and the square root of 1/2 is not a transcendental number. Resulting in value(a) is a definable value(by geometry), and it is a curve segment.

Because artificial geometry can draw a circle, although the circumference value is unknown. So natural geometry also can draw a line segment, although line segment value in natural geometry is unknown. This means that you can use a ruler to draw a line segment connecting the two end points of the curve segment(a), and that line segment is the square edge we need to find

Answer of the problem:

- First, we draw a curve with value of a, the shape of this curve follows the standard in natural geometry.

- And next, we use a ruler to draw a line connecting the two end points of the curve.

- Lastly, draw four line segments, then join them together to form a square with the area of a given circle.*(Or the square drawn is an inscribed square in a circle of area S, this square and the original circle have the same area because they both have the* $\frac{\pi}{2}$ *ratio when compared to the area* $S = \frac{1}{2}\left(\frac{C}{2}\right)^2$*)*

- That is the solution to the problem.

Note:

- We can use artificial geometry to draw line segments with value a to solve the problem without necessarily applying the method of solving according to natural geometry.

- The value of the area of a circle with $S = \frac{1}{2}\left(\frac{C}{2}\right)^2$ *is the result of the concept of a circle in classical geometry. If we caculate the area of the circle according to the concept of natural geometry(curved surface) then its value is half the area of the sphere and equal to* $S = \left(\frac{C}{2}\right)^2$.

4.4.3. ***Application in motion of objects***

An application to find the true speed of light when light moves in space:

Speed of light on artificial scale: $v = c \approx 3 * 10^8$ metres per second.

When calculating the velocity using the artificial scale, the solution of the equation is an line segment scale, but light always moves in a curve while curve length is always greater than the line lengths.

Therefore, the true speed of light when moving in space will be:

$$v = \frac{\pi}{2} * c = \frac{3,14}{2} * 300.000.000 = 471.000.000$$

Note:This value is still not the maximum speed in the universe.

Meaning: Using artificial scale to measure curves is difficult and will be confusing if not realized.

4.5. ***Purpose and meaning of nature geometry***

Artificial geometry uses simple expressions to calculate line objects (straight, flat). Expressions that show simplicity and the solutions of expressions also give exact results (not a probability). But if artificial geometry is applied to curved objects, the artificial geometry will be in trouble with many unsolvable problems

Therefore, natural geometry was built to fill curved areas that artificial geometry could not fill, as follows:

- There is no error value when calculating solutions of curve equations.

- No more complexities in methods of calculating curve equations.

- No more confusion in the results of calculating curve equations.

Natural geometry combined with artificial geometry makes a perfect set of geometry to accurately measure objects in nature and man-made objects. Curve problems will let nature geometry solve - and vice versa.

Finally, we end with a problem: "Which value on the natural scale is of the constant e in natural logarithms?"

5. The level of space compression

The content of this section is an application of the immobility theory and curve math. Therefore, we can consider the content as an extension of the theory.

5.1. ***Methodology***

5.1.1. ***Methodology***

In the section of curve math, we have built a natural geometric foundation to calculate curved objects, curved motion, and build basic wave functions. In this section, we combine curve math and laws of conservation to discover a new conservation law and a new physical quantity.

In quantum mechanics, Heisenberg's uncertainty principle does not allow us to know the position and velocity of a particle at the same time, which is also reflected in the immobility theory. For example, when a particle moves, it disappears(no position) and only knows the position when the particle does not move(appears).

But the uncertainty principle can be improved through the law of conservation of time:

$$t' + t = T = const$$

Where:

- Determine position and time of particle appearance based on variable t

- Determine the velocity (average speed) based on the variable T

- Determine direction of motion (graph of wave function) based on the variable t'

The method to improve the Heisenberg's uncertainty principle is stated as follows:

- The principle states that: "We can never accurately determine both the position and velocity (or momentum) of a particle at the same time. If we know an increasingly accurate quantity then the remaining quantity will be less accurate."

- Improving the principle of uncertainty according to the law of conservation of time: **"At the same time, we only know whether a particle appears or disappears."**

This improvement has an important meaning, because if we rely on the law of conservation of time and construct the f(t) and f(t') functions of the particle, then use both functions at the same time then uncertainty principle is solved. This means that in any given moment, we can determine whether the particle appears or disappears. If it appears then determine its position by the function f(t), or if it disappears then determine the wave function by the function f(t').

To do this, we need to construct the wave function f(t') and the graph of the wave function f(t'). Then determining the position and time of the particle appearing on the graph of the wave function f(t') will be solutions of the function f(t).

This does not violate the uncertainty principle, because the uncertainty principle still exists but we have improved it according to the immobility theory. This improvement avoids errors in measurements for which the uncertainty principle is mentioned as follows:

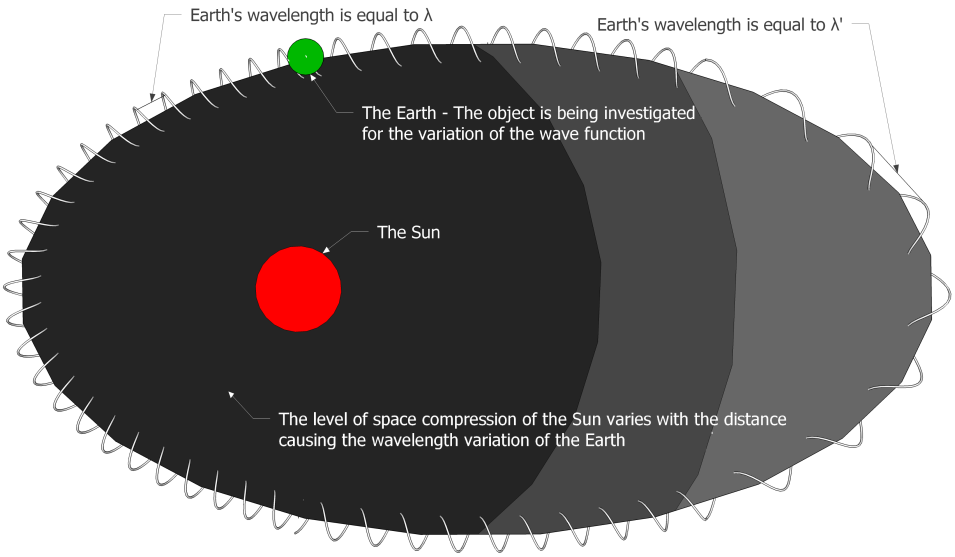
$$(\Delta_x)(\Delta P_x) \geq \frac{h}{2\pi}$$

The reason for this error in the classical calculation method is because we have agreed on the variable t and the variable t' in a function, then we only use the variable T to calculate*(a general wave function in quantum mechanics takes the form $\psi(x,T)$)*, so there was confusion(overlap) in the disappearance(motion) and appearance(position) of the particle. We will now separate the variables t and t' respectively for each equation to use, thus solving the problem of measuring position and velocity at the same time.

Now that we have variables t and t' in a wave function, the next section we will build the space variable.

5.1.2. ***Determine the space variable in the wave function***

We will survey a familiar closed system to visualize the necessary quantities contained in the wave function. Taking the model of Earth moving with the acceleration around the Sun to survey, we have the following model:



(Figure 36: Investigate a closed system to determine space variable)

Basic level comments:

- The distance of the Earth and the Sun affect the speed of the Earth, if the distance decreases (the Earth near the Sun) then the speed of the Earth will increase.

- As the distance decreases, this causes the wavelength of the Earth to decrease, resulting in the Earth moving faster.

Depth level comments:

- The distance of the Earth and the Sun are not the object that cause changes in the speed of the Earth, the distance is only an indication to us that there is a change in the level of space compression around the Sun (Gravity of the Sun).

- The closer the Earth is to the Sun, the level of space compression in that region is higher, the maximum level of space compression of the Sun will be "measured" at the Sun's surface and will gradually decrease value over distances.*(The level of space compression inner the center of sun is not considered because that is considered to be another closed system).*

Summary:

- The level of space compression of the Sun changes the wavelength of the Earth, the two quantities are closely related to each other in a closed system. If we know the variability of the level of space compression (denoted by k), we can infer the variation in wavelength in the wave function.

- In other words: We usually define the wave function graph of an closed system through the time variable T and the position space variable x in the wave function. For now, we will define the wave function graph of an closed system through variables t and t'combined with the variable k; where variable t determines position, variable t determines the wave function and variable k determines the degree of variation of the wave function.

- In the whole of the next section, the manuscript will focus on building the relationship of the variable k with the functions(the functions will be presented in general form), the measurement method and application of the variable k. This is also the physical quantity as the basis for us to build the function of the forces and unify the forces in space.

5.2. ***Build space compression variable k***

5.2.1. ***Unifying the naming***

Space has a certain degree of compression, which is mentioned in the previous section. The level of space compression depends on the size of the matter system being survey, or it depends on the interaction of the object outside the matter system, which affects the matter system during the survey.

For example, the Earth has a specific level of space compression at the surface of the Earth, in addition it is subjected to a level of space compression of the Sun causing the Earth to move around the Sun and accelerate.

The expansion of space is not a new discovery in immobility theory, it has been mentioned a lot since Einstein's time. Therefore, the manuscript did not call this property the "level of spatial expansion" as before, but was replaced by the new name: "level of space compression"; in the physical equations we call the "space compression ratio k" or "variable k".

5.2.2. ***Method of building variable k***

From curve math, we have the following statement:

"There is a difference between a curved object and a flat object, the ratio between a curved object and a flat object corresponding to it is equal to $\frac{\pi}{2}$."

$$[\text{curved\_object}] = \frac{\pi}{2} * [\text{flat\_object}]$$

If the flat object is a line segment d, then the curved object is equal to:

$$[\text{curved\_object\_No.1}] = \frac{\pi}{2} * d = \pi * r$$

The shape and dimensions of this curved object, if calculated on the natural scale then it is the half the circumference of a circle and have a value equal to:

$$[\text{curved\_object\_No.1}] = i * \frac{C}{4} = \frac{C}{2}$$

Survey in two-dimensional space, if the flat object is a square with area d^2, then the curved object is equal to:

$$[\text{curved\_object\_No.2}] = \frac{\pi}{2} * d^2 = 2\pi r^2$$

Comment: The shape and dimensions of the curved object No.2 in the artificial scale are twice the area of a circle with radius r. If the area is calculated in the natural scale, the shape of No.2 is the concept of a circle and has an area equal to:

$$[\text{curved\_object\_No.2}] = 2 * i * \left(\frac{C}{4}\right)^2 = \left(\frac{C}{2}\right)^2$$

Continuing the survey in three-dimensional space, if the flat object is a cube of volume d^3, then the curved object has the value equal to:

$$[\text{curved\_object\_No.3}] = \frac{\pi}{2} * d^3 = 3 * \frac{4}{3}\pi r^3$$

Comment: The shape and dimensions of the curved object No.3 in the artificial scale are three times the volume of a sphere with radius r. If the volume of No.3 is calculated in the natural scale, then the shape of No.3 is the concept of a sphere and the volume is equal to:

$$[\text{curved\_object\_No.3}] = 3 * \frac{4}{3} * i * \left(\frac{C}{4}\right)^3 = \left(\frac{C}{2}\right)^3$$

Applying this mathematical relationship into space, we formulate an important statement about the level of space compression as follows:

"Space has a certain degree of compression, and the maximum compression level of a volume of space does not exceed the $\frac{\pi}{2}$ ratio compared to the beginning."

This means that if we consider the structure of space as spherical points connected together then the three adjacent point particles cannot be compressed

to the maximum to become a line segment(satisfying the law of curves). Or, if we consider space as a spherical volume then the sphere cannot be compressed to the maximum to become a cube.

If we denote k as the space compression ratio then $k \in (0, \pi/2)$. The value $k_{\max} = \pi/2$ is a limit constant for the degree of space compression.

Variable k is a new discovery in physics and natural philosophy, it is built as the basis variable for the wave function graph as the methodology mentioned. In addition, it is also the basis of forces in physics *(space force, space pressure, gravity, mass)*, where forces are functions of variable k.

Take an example of pressure to illustrate, for different substances, the compression ratio is also different *(the compression ratio of substances and springs should not be confused with the space compression ratio)*. For example, if we apply an equal compression force to liquids and gases, the degree of variation in the compression ratio of liquids and gases will be different.

Therefore, the compression ratio of substances is different and there is a maximum limit. If breaking the compression ratio then the substances will no longer be the substances*(the structure of matter is changed, or matter is converted into energy)*. In addition, because the pressure varies with the compression ratio, so pressure is a function of the compression ratio.

Similarly, space has a compression ratio of space and has a limit value of $\frac{\pi}{2}$. Because k is the fundamental variable of forces, so the variable k is also the foundation of conservation laws.

5.3. ***Foundation of conservation laws***

5.3.1. ***Conservation of mechanical energy***

We return to the analysis of the law of conservation of time of a closed system:

$$t' + t = T = const \tag{6}$$

Where:

- *t' is the motion time of the matter system*
- *t is the immobility time of the matter system*
- *T is the intermittent movement time of the matter system.*

Comment: The law of conservation of time takes the shape of the law of conservation of energy, where variable t' is the foundation of kinetic energy and the variable t is the foundation of potential

But the law of conservation of mechanical energy of a closed system is always associated with the operating environment of matter, such as the spring pendulum or gravity environment.

So if we multiply the two sides of the equation by the compression ratio of the environment(gravity), then we get a fundamental equation of the law of conservation of mechanical energy.

$$kt' + kt = kT = const\_1 \tag{7}$$

This means that when the matter is placed in an environment with variable k, the variable k causes the velocity variation of matter, which changes the variables t and t'. The law of conservation of mechanical energy is built according to the functions of the variable k as follows:

$$f(k,t') + f(k,t) = f(k,T) = const\_2$$

Where:

- f(k,t') is the kinetic energy, its value is a function of the variable t' varying with k.

- f(k,t) is the potential energy, its value is a function of the variable t varying with k.

- f(k,T) is the mechanical energy, its value is preserved because T does not change with k.

Note:

- The manuscript focuses on the construction of the variable k, so the functions are only generalized.

- The law of conserving mechanical energy is based on equation (7) does not need a frame of reference, it is true for all times.

5.3.2. ***The law of conservation of momentum***

The momentum of a closed matter system is as follows:

$$p = mv$$

Combine the momentum equation with Equation 7. Because the kinetic energy of a matter system is closely related to the momentum, so the kt' value is the foundation of the momentum of a matter system. We express the momentum function on the variables k, t' as follows:

$$p = g(k)h(t')$$

Where:

- g(k) is the mass of the matter system, the value of mass is calculated by a function of the variable k affecting the entire quantity of matter contained in the object of the survey: m = g(k)

- h(t') is the velocity of the matter system, the value of the velocity is calculated by a function of the variable t'

Because the momentum of two objects does not change before and after interacting in a closed system. Combining this with Equation 7 to show the interaction of the two objects with the respective momentum before collision is $p_1 = g_1(k)h_1(t')$ and $p_2 = g_2(k)h_2(t')$, we have:

$$\begin{aligned} &g_1(k)h_1(t') + g_1(k)h_1(t) + g_2(k)h_2(t') + g_2(k)h_2(t) = \\ &= g_1'(k)h_1'(t') + g_1'(k)h_1'(t) + g_2'(k)h_2'(t') + g_2'(k)h_2'(t) \end{aligned}$$

The momentum equation is conserved:

$$g_1(k)h_1(t') + g_2(k)h_2(t') = g_1'(k)h_1'(t') + g_2'(k)h_2'(t') \tag{8}$$

So equation eq:9 is also conserved:

$$g_1(k)h_1(t) + g_2(k)h_2(t) = g_1'(k)h_1'(t) + g_2'(k)h_2'(t) \tag{9}$$

Equation eq:9 is also conserved, furthermore the functions depend on the variable t (immobility time), It determines the position and time of the object's appearance. This gives us an important meaning:

"If the law of conservation of momentum (eq:8) gives us information about the velocity and direction of motion of objects, then equation eq:9 will give us the position and the appearance time of the objects on the graph of the wave function eq:8."

Equation 9 is a hidden law drawn from the combination of the law of conservation of mechanical energy and the law of conservation of momentum.

The combination of of both equations(eq: 8 and eq: 9) gives us information about wave function graph (by t') and the position of the particle (by t).

This was mentioned in section (5.1) on how to improve the uncertainty principle. Thus, we have all the necessary materials *(methodology, general equations, variables)* to decode the uncertainty principle according to the immobility theory.

5.4. ***The value of k at the surface of the earth***

5.4.1. ***Method of calculation***

The variable k is the cause of the velocity variation in a closed system, when k varies in the direction of increase from k_0 to $\pi/2$ ($k_0 < \pi/2$) then the time t' varies from t'_0 to T. Hence the variation of Δk will be calculated by the expression:

$$\Delta k = \frac{\pi}{2} * \frac{\Delta t'}{T} = \frac{\pi}{2} * \frac{\Delta v}{C}$$

Where:

- Δk *is the degree of variation of k,* $\Delta k = k_1 - k_0$

- $\Delta t'$ *is the degree of time difference in the disappearance period of the object,* $\Delta t' = t'_1 - t'_0$

- Δv *is the degree of variation of velocity,* $\Delta v = v_1 - v_0$

- T *is total survey time.*

- C *is the maximum speed in the universe, C is different from the speed of light.*

In addition, the relationship between k, t' and v is also expressed through a trigonometric equation:

$$Sin^2(k) = \frac{t'}{T} = \frac{v}{C}$$

And the relationship between k, $T_{\min}$, and the number of occurrences of the particle during time T is shown in the expression:

$$n = \frac{T}{T_{\min}} * \sin(k)cos(k)$$

Where:

- n is the number of occurrences of particle in time T (frequency of particle occurrence)

- $T_{\min}$ is the smallest time unit in the universe, $T_{\min}$ is different from Planck time ($T_{\min} = \text{const}$ and cannot be divided to be smaller)

- k is the space compression ratio during the survey period T

- T is total survey time.

$T_{\min}$ calculation method:

The nature of existence is appearance (matter particles tend to be motionless), but matter exists in space, so they depend on the compression ratio of space k, which causes a process of "disappearance - appearance" repeated of matter particles.

On the other hand, we already know that $T = t'_1 + t_1 + t'_2 + t_2 + + t'_n + t_n$. Therefore, if a particle moves at a velocity $v = f(t') = \frac{t'}{T} * C$ (with $v \leq C/2$) then $t'_1 = t'_2 == t'_n = T_{\min}$; otherwise if a particle moves at a velocity $v \geq C/2$ then $t_1 = t_2 == t_n = T_{\min}$.

Thus, if the survey in the case of $v \leq C/2$, $T_{\min}$ is calculated by the following formula:

$$v = \frac{t'}{T} * C = \frac{n * T_{\min}}{T} * C$$
$$==> T_{\min} = \frac{vT}{nC} = const$$

And if the survey in case $v \geq C/2$ then $T_{\min}$ is calculated:

$$T_{\min} = \frac{t}{n} = \frac{T}{n}\left(1 - \frac{v}{C}\right) = const$$

Finally, we have a generalized equation showing the relationship between $T_{\min}$, n and k, (with $v \in (0, C/2)$): $n = \frac{T}{T_{\min}} * \sin(k)cos(k)$

Calculate the value of k at the surface of the earth:

The value of k at the Earth's surface $k_{\text{Earth\_surface}}$ is equal to the sum of all Δk since the object moved into the interaction range of k_{Earth} and the velocity change in ascending direction, corresponding to $k_{\text{Earth\_surface}}$ is the escape velocity minimum required of the Earth to combat $k_{\text{Earth\_surface}}$. Therefore:

$$k_{\text{Earth\_surface}} = \sum \Delta k = \frac{\pi}{2} * \frac{v_{\text{Escape\_velocity}}}{C} = \frac{\pi}{2} * \frac{11186}{C}$$

Note: Maximum velocity C in the universe measured in section 1.2.2 and expressed in m/s

5.4.2. ***Proposal to verify compression ratio k***

We can verify the accuracy of k through the comparison of the results of two calculation methods: the method of calculating the independence of Δk in relation to velocity and variability of Δk regarding gravitational acceleration g.

For example, the velocity of an object falling from height h to the ground, the classical physics method is calculated in time T:

$$V = V_0 + gT$$

And the method of immobility theory will be calculated according to Δk (Here Δk is calculated according to Δv) as follows:

$$V = V_0 + \Delta v = V_0 + \frac{2C}{\pi} * \Delta k$$

Therefore:

$$gT = \frac{2C}{\pi} * \Delta k$$

With the above proof, the calculation of velocity in delta k is still accurate in cases of objects being thrown horizontally, or oblique to the Earth's surface. In addition, the use of k to calculate and interpret physical events is superior to classical constants (gravitational acceleration g, gravitational constant G), because g and G are not really constants and we will omit frame of reference while using k.

5.5. ***Application and meaning of k***

5.5.1. ***Application***

The manuscript will use k to calculate the minimum mass and gravity of a black hole that light can't escape.

The required value k of this black hole is as follows:

$$k_{Black\_hole\_surface} \geq \frac{\pi}{2} * \frac{v_{light}}{C} = \frac{\pi}{2} * \frac{3 * 10^8}{C}$$

Therefore the minimum mass of the black hole is required:

$$m_{Black\_hole} \geq \frac{m_{Earth} * k_{Black\_hole\_surface}}{k_{Earth\_surface}}$$

And the minimum gravity of the black hole is equal to:

$$Gravity_{Black\_hole} \geq \frac{Gravity_{Earth} * k_{Black\_hole\_surface}}{k_{Earth\_surface}}$$

5.5.2. ***Meaning of k***

The compression ratio k is determined as the basis of forces and interaction phenomena in space, so the greatest significance of the compression coefficient k is used to calculate and unify the forces in physics. In addition, the compression ratio k also provides a bold idea for understanding space, matter, and energy, which we can experiment and verify to build these concepts through special cases when k approaches the threshold $k_{\min} = 0$ or $k_{\max} = \pi/2$.

There is a big contradiction between the compression coefficient k and the Big Bang theory *(a theory that explains the past of the universe and is difficult to verify)*. But this is not a serious problem, because if we assume $k_{\max} = 10^{100...00}, (k_{\max} \neq \pi/2)$ then unifying forces based on compression ratio k is still a correct method; and the force values still remain the same. Because the functions and physical equations are based on the ratio of k to calculate, so even if $k_{\max} = 10^{100...00}$ then all values in the equations are still true.

Only a small problem arises if $k_{\max} = 10^{100...00}$ then Space can compress into a singularity, and if $k_{\max} = \pi/2$ then the compression limit of space does not exceed $\pi/2$. Therefore, whether space becomes a singularity or not, the compression ratio k is also a new discovery for the development of physics and natural philosophy in the future.

6. CONCLUSION

6.1. ***Unification of the three fundamental forces***

6.1.1. ***Electromagnetic force***

- Magnetic fields are space waves of matter systems. A matter system will be governed by many levels of space waves at the location where it is appearing. The magnetic field is determined by wave property of particle, they have the function of attract objects towards each other or pushing objects away from each other.

- Electric field is a particles band moving in levels of space wave. The electric field is determined by the disappearance - appearance of particles, they are characterized by physical motion and tangible collision.

6.1.2. ***Strong force***

The strong force is name for cohesion force between the three Quarks, it formed from the collision of space waves of three Quarks. When in equilibrium, the cohesion is the most stable, if impacting any Quark (pulling out or pushing inward) will break the principle of resonance, and there will be no anti-Quarks and anti-Gluons reappear. Strong force is the secondary force(not basic force)

6.1.3. ***Gravity***

Gravity is another name for space force, but there are differences in the nature of these two concepts. Space force is created by pressure of space on matter, while gravity is created from the mass of matter.

6.1.4. ***Summary***

- All three forces(Electromagnetic force, Strong force, Gravity) are formed from space acting on matter, in which each force is considered in one aspect of space acting on matter.

- Space is also energy because space has its own internal force, it form space forces and space waves, and it creates virtual particles.

6.2. ***The results achieved in the manuscript***

6.2.1. ***About Philosophy***

- Proved that matter is always motionless in space.

- Proved the existence of time and non-dilation.

- The law of curve.

- Conclusion that space is energy.

6.2.2. ***About Maths***

- Solved the squaring the circle problem(a millennium problem).

- Proved that the value of pi is equal to 2.

6.2.3. ***About Physics***

- Explained the nature of gravity.

- Explained quantum tunneling.

- Explained the Pauli exclusion principle.

- Explained the cause of wave-particle duality.

- Explained the nature of inertial force.

- Explained dark matter.

- Explained dark energy.

- Explained matter and antimatter.

- Explained the spin of 1/2

- Explained the phenomenon of Nucleon excess mass.

- Explained the spin value of Nucleon.

- Proposal to re-test the C constant.

- Improve the uncertainty principle.

- Constructing space compression ratio.

- Unifying the three basic forces in nature.

A new direction for modern physics:

- Contribute to building for quantum mechanics.

- Replaced general relativity with another theory.

- Understand more about motion in classical physics.

- Unifying quantum mechanics and astronomy.

6.3. ***Epilogue***

First of all, the author would like to thank all of you who have consulted and reviewed this manuscript.

The author hope this manuscript will be of some help to Philosophy - Mathematics - Physics, as well as the manuscript that brings a new dimension to the understanding and development of other science subjects.

Lastly, the author would like to listen to your comments, as that is one of the great opportunities to fill in what is missing in the manuscript.

Thank you so much!

Sincerely,

7. REFERENCE

References

[1] Section 1 - Gravity Probe A (GP-A) - *Wikipedia*

[2] Section 1 - Equivalence principle - *Wikipedia*

[3] Section 1 - Experimental testing of time dilation - *Wikipedia*

[4] Section 1 - Gravitational time dilation - *Wikipedia*

[5] Section 1 - Space-time - *Wikipedia*

[6] Section 1 - Quantum tunnelling - *Wikipedia*

[7] Section 1 - Atomic Clock - *Wikipedia*

[8] Section 2 - Gravitational lens - *Wikipedia*

[9] Section 2 - Expansion of the universe - *Wikipedia*

[10] Section 2 - Space and time bend - *Guardian*

[11] Section 2 - Pauli exclusion principle - *Wikipedia*

[12] Section 2 - Atomic orbital - *Wikipedia*

[13] Section 2 - Gravity - *Wikipedia*

[14] Section 2 - Mass - *Wikipedia*

[15] Section 2 - Electric charge - *Wikipedia*

[16] Section 2 - Mystery Behind Galaxy Shapes Solved - *space.com*

[17] Section 2 - Our Milky Way is warped - *earthsky.org*

[18] Section 2 - Milky Way is 'S-shaped' - *abc.net.au*

[19] Section 3 - Alternating current - *Wikipedia*

[20] Section 3 - AC motor - *Wikipedia*

[21] Section 3 - Quark - *Wikipedia*

[22] Section 3 - Fundamental interaction - *Wikipedia*

[23] Section 3 - Strong interaction - *Wikipedia*

[24] Section 3 - Electromagnetism - *Wikipedia*

[25] Section 3 - Gluon - *Wikipedia*

[26] Section 3 - Spin - *Wikipedia*

[27] Section 3 - Proton spin crisis - *Wikipedia*

[28] Section 4 - Circle - *Wikipedia*

[29] Section 5 - Conservation of Momentum - *Wikipedia*

[30] Section 5 - Conservation of energy - *Wikipedia*

[31] Section 5 - Conservation of mechanical energy - *Wikipedia*

[32] Section 5 - Uncertainty principle - *Wikipedia*