

THEORY OF EVERYTHING WAS FOUND

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1. Abstract

This manuscript newly proposes a model of elementary particles and space that describes the creation and structure of the universe from a collective point of view, and that includes the interaction of elementary particles, the generation of electromagnetic field, gravity and unknown dark energy. This model goes ahead of “quantum field theory” with showing many concrete figures, even if it leaves mathematical quantitative inspections until later. The body of the theory is intuitively convinced by anyone. In this theory, the aspect of the universe is caught as not mere mathematical three-dimensional space, but really existent matter (energy body) with physical nature. More, the material of many types of elementary particles is the same material as the universe. Namely, elementary particles are the energy body itself with the closed waves that are rotating around their own axis. Also, space generates elementary particles and absorbs them by condensation and diffusion of space.

2. Introduction

Modern physics is highly developed through many experiments and studies for a long period. But there are many problems with no replies to artless and fundamental question. Why is magnetic field created when electrons move? Why do elementary particles have two sides of particles and waves? Why is mass and energy equivalent etc? Also, the unification of the four fundamental forces including gravity is a big goal. Really, the unification of the four fundamental forces is tried to make with gauge theory which predicts that all of forces arise from exchange of gauge bosons between fermions.

But it is unsuccessful to apply gravity to gauge theory. Futamase¹ and Wikipedia² state this in the statement. More, currently, dark energy that inflates the universe with acceleration is quite a riddle. Energy body theory can resolve these problems. For that, it presumes that elementary particles and field are the same matter, even though modern physics treats them separately.

The reason is as follows.

- (1) Space is a vacuum space. And vacuum space in quantum theory is never in a state of “nothing.” It is said that pair production and annihilation are always occurring, as the virtual particles of electrons and positrons. Mizutani (eds)³ and NHK Enterprises.Inc.21⁴ state these in the statement.
- (2) An elementary particle is considered an ultimate constituent of substance. But there must be common ingredient of many elementary particles.

First it is simply explained what energy body is. After that, main factors of elementary particles, electric charge, mass and spin is explained with comparison of current understanding and new one. Next, out of four fundamental forces, three forces such as strong interaction, weak interaction and electromagnetic interaction are explained. By those questions, the reason why magnetic field is created when electrons move, what the relation of electric field and magnetic field is, what electromagnetic waves and light are, why elementary particles have two different faces, why energy and mass are the same, are resolved. And more, those are understood as concrete images. Lastly, gravity, that is one of four fundamental forces, is explained. By this, what space deformation that is described in general theory of relativity is, why all substances are attracted by gravity, are resolved, and those are understood as concrete images too.

More, as the universe (or space) is made of energy body. Therefore it is found that the universe is finite, and there is nothing, even space outside of the universe. And more, it is showed that the creation of gravity is accompanied by the creation of dark energy which makes the universe expand at an accelerating rate. As a result, it is found that “the space circulation system of energy body” is the origin of the activity in the universe. The big bang theory will be taken away by it. Many stars are given birth to by redundant static energy body around the center of the universe. After that, they are conveyed to the fringe of the universe where the energy level of static energy body is low, and is absorbed into static energy body.

Again, the increased static energy body collapsed into the center of the universe and stars are created. These repetitions are “the space circulation system of energy body”. After all, the following very simple result is gained. Every phenomenon results from every interaction are caused by the difference of energy level between energy body systems.

3. Energy Body

The conception of energy body theory is briefly explained in this chapter. And from the next chapter, fundamental physical phenomena are explained. Through these explanations, it is found energy body theory can makes clear many vague problems of physics. Energy body is the ultimate matter which materializes nature world, and is universe itself. The space, matter, and energy that make up the cosmos all come down to energy body. In addition, energy body can be thought of being composed of cell-like elements that we will call energy cell bodies. Energy cell bodies are packed without gaps. Energy cell bodies are far smaller than elementary particles. At the same time, energy body vibrates by the medium of energy cell bodies. Namely, the vibration of energy body is energy itself. Energy body is divided into two systems. One is static energy body of the entire space of the universe. And the other is kinetic energy body of elementary particle which wave is in a closed state.

4. Elementary Particle

4.1. Elementary Particle Model

If an image of an elementary particle based on the properties summarized above is created, it looks like Fig.1. However, an illustration of the infinite span of the base of the wave is omitted, as it is difficult to create this image. The waves of the energy body are rotating around their own axis. The closer the wave is to the axis, the higher the energy state, the shorter the wavelength, and the higher the amplitude. As it moves away from the center, the energy level decreases, approaching the standard level. Theoretically, the base of these rotating waves has an infinite width. In other words, the waves of the energy body are closed in a spherical shape and they spin around their own axis. This “spinning” does not mean they are spinning like a top, but rather that the progression of the waves is closed within a spherical shape. Since the waves are closed, such energy bodies form independent energy systems. For this reason, they are distinguished from static energy body. Each individual kinetic energy body is independent and small in size. Fundamentally, there is one type of wave frequency type for each type of elementary particle. Thus, the closer the wavelength is to the center (axis), the bigger the amplitude and the higher the energy level. But there are times when elementary particles of different types (frequencies) form compound waves, creating another type of elementary particle.

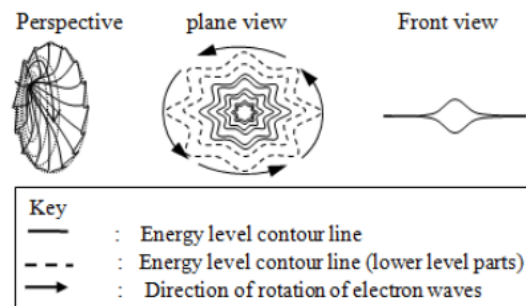


Fig.1. Image of form of elementary particle

4.2. Interference Fringes of Electron

Before advancing the next, one of superb points about the energy body model of electron should be shown through the better understanding of the double-slit electron interference experiment. The double-slit electron interference experiment is that, when many electrons pass through the double slits, the interference fringes of electron appear on the screen. Concerning that, there is the “Copenhagen

interpretation,” which holds that the waves of the electron are spread out just before they arrive at the screen, but in the second at which they arrive (*i.e.*, the second at which observation occurs), they are compressed into sharp needle-like waves. They feel that it is not understandable, but it is still currently supported. Mizutani(eds)³ states these in the statement.. In regard this, energy body theory explains as follows.

The interference fringes are caused by the reason that each wave of electrons (kinetic energy bodies) affects their way and some change. Therefore, the location of electrons is decided by probability.

- (1) Then, the process of occurrence of electron interference is explained in fig 2 as follows.
- (2) Because the base of the wave is spread out and inclines as it advances, the probability is higher still.
- (3) Here, we can assume that the electrons that pass through slit X and electrons that pass through slit Y do encounter each other. When this encounter of the electron pairs takes place, the movement of direction of the waves reverses each other; hence, they repel each other and their paths change. Interaction of electrons is detailed in” 6. Interaction of Electromagnetism.”
- (4) At this time, when both electrons encounter each other at peaks, the pair is strongly repelled, and change path. For this reason, at the point where the electron continues straight and should arrive at the screen, the electron does not arrive and the spot becomes a shadow instead. This is the shadow part of the interference wave.
- (5) On the other hand, when electrons encounter each other at troughs, the repulsion force is weak, and both electrons continue forward unchanged and shine onto the screen. Furthermore, adding to this the electrons that met at peaks and changed paths, the screen shines brightly. This is the bright part of the interference wave.
- (6) In this way, when many electrons are emitted, interference fringes appear on the screen. Fig.2.

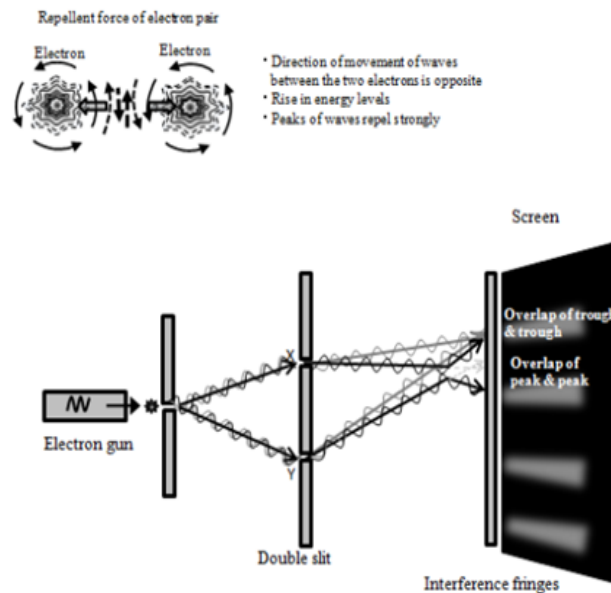


Fig.2. Interpretation of double-slit electron interference experiment by Energy body theory.

5. Main Factors of Elementary Particle

The main factors to discriminate elementary particles are electrical charge, mass and spin. Cimarsosa⁵ states this in the statement. From the next chapter, these three factors are explained comparing with current understanding and new understanding of energy body theory.

5.1. Electrical Charge

5.1.1. Current Understanding

Electrical charge is one of characters of elemental particles. Electrons have an electric charge of minus 1, protons have an electric charge of plus 1. The electric charge is the same, there is repulsion, and in cases where the charge is different, there is attraction. Wikipedia⁶ states these in the statement.

5.1.2. New Understanding

Electrical charge is the interaction that is decided by the direction of the waves of elemental particles (See; 8.1. Binding of electron and proton) Elementary particles are kinetic energy bodies with closed energy body waves that revolve to the left around the progression axis. In contrast, protons are kinetic energy bodies with closed energy body waves that revolve to the right around the progression axis. This causes the action of both the plus + 1 and minus - 1 electric charge. When protons and electrons draw close, the electron waves that rotate left and the proton waves that rotate right begin to rotate in the same direction between the electrons and protons. As a result, in this part, the speed of the waves becomes faster, wavelength extends, and the energy levels of the energy body drop. Thus, a force works from the center of the electrons, where energy level is high and protons toward the space in between them, where energy level is low, and the electrons and protons bind by attractive force. Conversely, when two electrons or two protons draw near to each other, between the two electrons or two protons, the waves of each electron or proton go in the reverse direction. For this reason, the speed of the wave then becomes slower, and the wavelength shortens. Then there is a rise in the energy levels of the energy body between the two electrons or two protons, and a force works toward the center of the other electron or proton. As a result, the electron or proton pair repels one another by repulsive force. (See; 6.1. Binding of Electron and Proton & 6.3. Repulsion of Electron and Electron or Proton and Proton)

5.2. Mass

Mass is a property of a physical body which determines the body's resistance to being accelerated by a force and the strength of its mutual gravitational attraction with other bodies. Wikipedia⁷ states this in the statement.

5.2.1. Current Understanding

Although inertial mass and gravitational mass are conceptually distinct, no experiment has ever unambiguously demonstrated any difference between them. This rule of thumb is called the equivalence principle. Increasingly precise experiments have been performed, such as those performed by Loránd Eötvös. The "universality of free-fall" and the torsion balance pendulum are on this principle. However, the equality of inertial and gravitational mass remains as puzzling as ever. Higgs mechanism on the basis of Higgs particles is postulated as the reason why inertial mass is caused, but it does not apply to gravitational mass. It is presumed that gravitational mass is caused by gravitational particles. Wikipedia⁷ states this in the statement.

5.2.2. New Understanding

(1).Inertial Mass

In energy body theory, the moving objects are viewed as follows.

When force is applied to an elementary particle, the static energy body at the front of an elementary particle becomes at a high-energy level. On the other hand, the energy level of the static energy body on the opposite side of the particle is at a standard level, so an energy level difference occurs between the spaces in front and behind the particle. Then, the static energy body in high-energy level at the front of the particle propagates as a plane (longitudinal) wave. For this reason, an elementary particle moves along the propagation of the increased energy level of static energy body. By the way, the energy of the force added to an elementary particle advances forward in the direction of the center of elementary particle. At this time, if the elementary particle is smaller, the energy reaches nearer the inside of elementary particle in shorter time. Because of that, the wave length of the plane wave of static energy body made by force gets shorter and the elementary particle moves faster. Conversely if the elementary particle is bigger, the

high-energy reaches farther away from the inside of elementary particle and with longer time. Because of that, the wave length of the plane wave of static energy body made by force gets longer and the elementary particle moves slower. This is the cause of mass.

(2). Gravitational Mass

What gives gravity acceleration to freely falling objects is the reducing rate of the deformation of the energy level difference of static energy body. In the gravity field, energy level of static energy body is reduced at fixed rate and the deformation of energy level difference remains. (See; 12. Gravity)
After all, as there is a fixed reduction of energy level in distortion, any kind of elementary particles are all attracted toward low energy side of static energy body at the same acceleration. The reason is because mass does not participate in gravity. Therefore, mass does not appear during the free falling of an object. The mass of an object appears at the time when the falling object is stopped by the resistance. In other words, mass appears when the same size of force as gravity acceleration and in opposite direction is added to the object. So, it is found that the cause of gravitational mass is the same as the one of inertial mass.

(3). Equivalence Principle

The different point between inertial mass and gravity mass is just whether the high-energy level of static energy body is made in front of an elementary particle or in back.

(4). Light and Electromagnetic Waves

Currently light and electromagnetic waves are understood as a kind of elementary particle. But, energy body theory states light and electromagnetic waves are the motion of electrons left in static energy body similar to imprints. (See; 9. Electromagnetic waves) Then, light and electromagnetic waves have just the only energy that they are supplied at the time when the orientation of the electron changes. After light and electromagnetic waves are generated, someone cannot artificially add any force to light or electromagnetic waves. Therefore, it can be stated that light and electromagnetic waves have no mass.

However, light and electromagnetic waves can be regarded as independent energy body system such as kinetic energy bodies that their waves are rotating around their own axis. Then, when they are in the space where the energy level of static energy body is varied, they are affected from there, such as gravity field or dark energy field, though the force is very small. By this reason, light and magnetic waves can also be considered that they have mass.

5.3. Spin

5.3.1. Currently Understanding

Spin is an intrinsic form of angular momentum that is degree of freedom in quantum mechanics, carried by elementary particles and is named as spin on the assumption that an elementary particle spins. There are two types (up and down) in magnetic moment of an electron. Also, there are two kinds (increase and decrease) in the difference of energy level. Sakamoto⁸ states these in the statement. The other elementary particles have the same property of spin. In 1940, Pauli proved the spin-statistics theorem, which states that fermions have half-integer spin and bosons integer spin. Sakamoto⁹ states these in the statement.

5.3.2. New Understanding

If atoms are heated, the electrons in the atoms make transitions to lower energy orbital with the simultaneous emission of light. At this time if an atom is in magnetic field, a phenomenon is brought about that emission spectrum from electrons is divided into some spectrums from one. This phenomenon is explained by spin in quantum mechanics. But the image of spin in the degree of freedom is vague. Then, from now on, it is explained using the instance of electrons by energy body theory. As a result, a concrete image of that will be obtained. An electron placed in the magnetic field takes a position at which its

orientation is parallel to the lines of magnetic force. No position is taken in a direction perpendicular to the lines of magnetic force. Furthermore, electrons can take a position of any angle that rotates centered on a line of magnetic force direction. In figure.3, the positions of electrons are fixed at the place of side A or side B, but it does not take the position of side C or side D. The reason results from relationship between the orientation of electrons and the energy lines of magnetic field. The photons emitted from electrons at side A get more energy than the photons from electrons at side B. And wavelength of photons from side A gets shorter than from side B. The reason is because that the direction of the waves of electrons and the waves of the lines of magnetic force of magnetic field are the same at side A and different at side B. More, the electrons take the up or down orientation, because electrons connect with proton, tilting the orientation. (See; 6.2. Electron Transition)

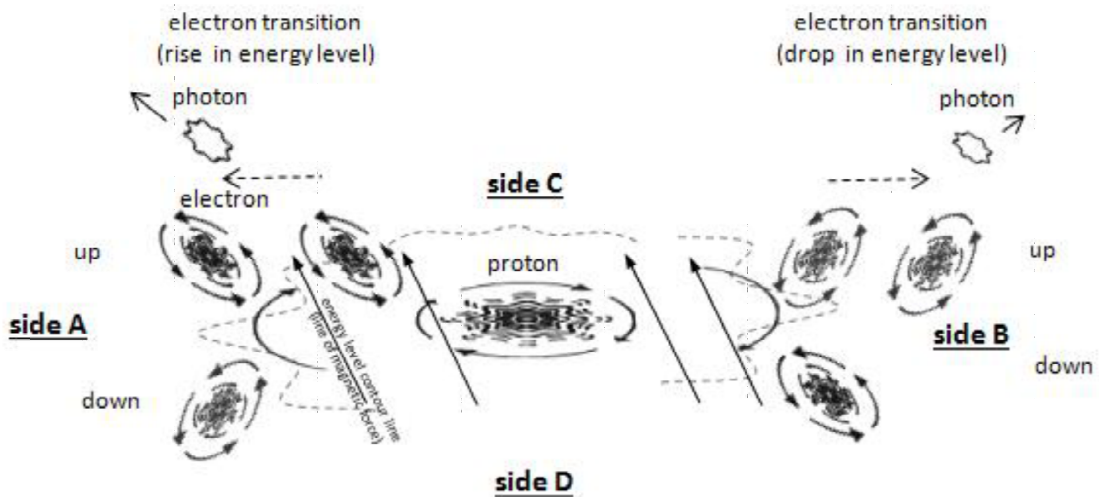


Fig.3. Positions of electrons depend on the lines of magnetic force in magnetic field

Electrons do not take the position in a direction perpendicular to the lines of magnetic force. Figure.4. shows that.

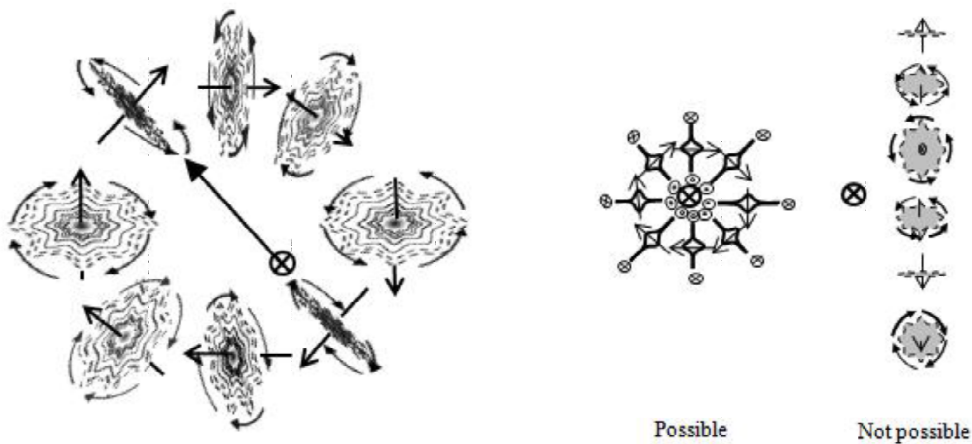


Fig.4. Orientation of electrons being parallel to the lines of magnetic force, not perpendicular

6. Interaction of Electromagnetism

In this chapter, it is shown that the model of elementary particles depicted by energy body theory can be effectively applied to the interaction of electromagnetism (electrical charge) too, and the interaction of electromagnetism works by the difference of energy level of energy body under the theory for everything of energy body.

6.1. Binding of Electron and Proton

Currently, it is said that electrons and protons have the opposite electric charge. Where the electric charge is the same, there is repulsion, and in cases where the charge is different, there is attraction. In other words, when electrons have an electric charge of minus 1, protons have an electric charge of plus 1. Furthermore, because neutrons do not have electric charge, there is neither repulsion nor attraction. The propagation of power in a remote space is explained in quantum mechanics as there being an electromagnetic field in this space, and force is propagated through the exchange of photons. Futamase¹ states these in the statement. Then, how can this be explained with energy body theory?

The rotation of elementary particle waves is related to the cause of difference in energy levels. Details about the interaction of electrons and protons within elementary particles are as follows.

- (1) Elementary particles are kinetic energy bodies with closed energy body waves that revolve to the left around the progression axis. In contrast, protons are kinetic energy bodies with closed energy body waves that revolve to the right around the progression axis. This causes the action of both the plus and minus electric charge.
- (2) When protons and electrons draw close, the electron waves that rotate left and the proton waves that rotate right begin to rotate in the same direction between the electrons and protons. As a result, in this part, the speed of the waves becomes faster, wavelength extends, and the energy levels of the energy body drop. Thus, a force works from the center of the electrons and protons toward the space in between them, and the electrons and protons bind.

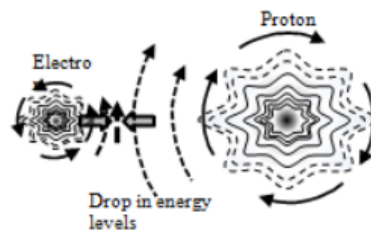


Fig.5. Binding of electron & proton

6.2. Electron Transition

As being explained above, when electrons and protons become close, wavelength extends, and there is a drop in energy levels of energy bodies, so electrons and protons may be thought to attach regardless of the distance, but this is not so. (Bohr's quantum condition)

The reason for this is as follows. Fig 6. & 7.

- (1) The waves of an elementary particle are closed in a circular shape, with a frequency that is characteristic to each type of elementary particle. Therefore, even if there is partial expansion and contract of wavelength, the number of nodes in the circumference does not change.
- (2) The number of nodes of proton waves is the same integer at any distance, regardless of the position from the center of the proton. The number of nodes of electron waves is also the same integer at any distance too,
- (3) In the bound part of the electron and proton, the number of nodes of the proton waves must be a numerical multiple integral of the number of nodes of electron waves. This is because the waves of the electron and proton in the bound part are shared, so closed waves would not be practical if nodes shifted position. Because the energy lines (See; 7.1.

Electric Charge) of electrons and protons spread out in a radial manner, the energy level contour lines (See; 8. Electromagnetism), which is the circumference of proton wave becoming the integral multiple of the nodes of the electron wave, appears at intervals.

- (4) The orbit of the electron chooses only one energy level contour line, which is the number of nodes of the proton wave that appear at intervals becoming the integral multiple of the nodes of the electron wave.
- (5) The reason for this is that the electron inclines toward the horizontal plane of the proton, so it can only come into contact with the horizontal plane of the proton in one place.

The choice of orbit of the electron is determined by the harmonic point of the speed of the electron rotating around the proton, and the drop (centripetal force) in energy levels caused by the extension of wavelength

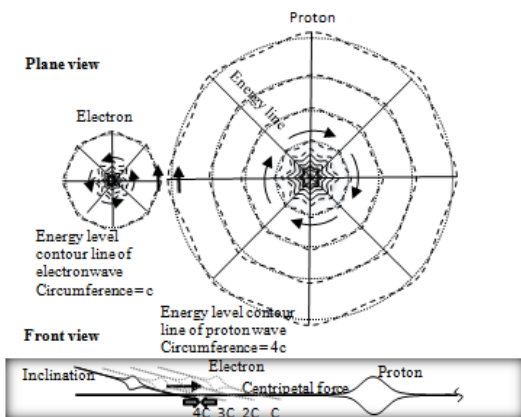


Fig.6. Electron transition determined by tilt of electron orientation

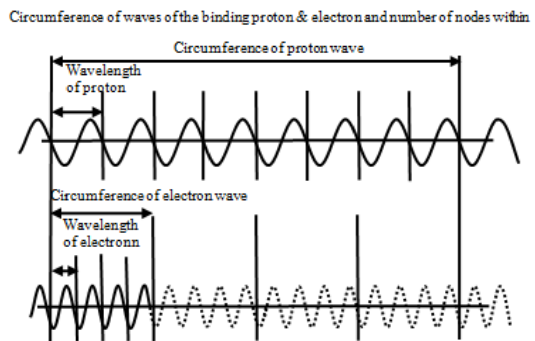


Fig.7. Electron transition determined by integral multiple of nodes of wave.

6.3. Repulsion of Electron and Electron or Proton and Proton

When two electrons or two protons draw near to each other, between the two electrons or two protons, the waves of each electron or proton go in the reverse direction.

For this reason, the speed of the wave then becomes slower, and the wavelength shortens. Then there is a rise in the energy levels of the energy body between the two electrons or two protons, and a force works toward the center of the other electron or proton. As a result, the electron or proton pair repels one another.

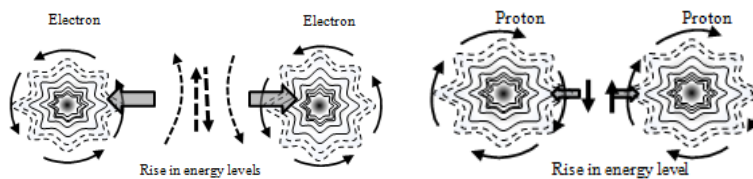


Fig.8. Repulsion of electron pair and proton pair

7. Electromagnetic Field and Electric Current

7.1. Electric Charge

The waves of protons and electrons are moving waves that rotate in right and left directions respectively. Therefore, in the space between the electron and proton, the movement of the waves becomes faster, the wavelength extends and the energy level drops. Thus, the spacing of the energy level contour lines widens in the space between the electron and proton and it narrows on the opposite side, creating an electric field. Energy body theory replaces electric fields with the spread of electron/protons' waves, lines of electric force with energy lines, and equipotential lines with energy level contour lines. Fig. 9 shows the energy lines and energy level contour lines of electron 1 and proton 1

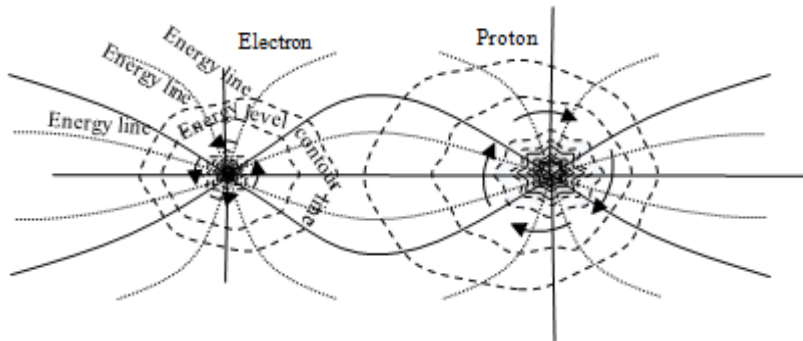


Fig.9. Electric field & electric charge

7.2. Electric Current

The electrons in the electric field move to the protons. In regard to that, there are two reasons as follows. One is the orientation of electrons. The free electrons inside coil moves in a free direction, However, because there are a countless number of electrons within the coil, if averaged as a whole, the flow of electric current becomes zero. When a coil is placed within an electric field, free electrons, which move in a free direction, take a position at which their direction is parallel to the energy level contour lines. No position is taken in a direction perpendicular to the energy level contour lines.

(It is the same as magnetic field that electrons take a position at which their direction is parallel to the lines of magnetic force. (See; 5.3. spin) The other one is a resultant force that is given from the direction of waves of electric field and waves of electrons. At the rear of the electron, the direction of the electron waves and the direction of the electron/proton aggregations' waves (energy level contour lines) are opposite, so the electron receives a repulsive force in the direction of movement. At the front of the electron, the direction of the electron waves and the direction of the electron/proton aggregations' waves are the same, so the electron receives an attractive force in the direction of movement. Thus, the force that works on electrons is repulsive at the rear and attractive at the front, becoming a resultant force of the vector of the same direction, and moving forward. The nearer approach the electrons to the protons, the stronger becomes the attractive force, conversely the weaker becomes the repulsive force. This point is different from magnetic field. Free electrons in magnetic field do not move to in one direction, because magnetic field is created by just electrons only. By this reason, electro motive force is gotten by artificially moving magnetic field. (See 8.4. Electromagnetic induction) These are shown in Fig.10.

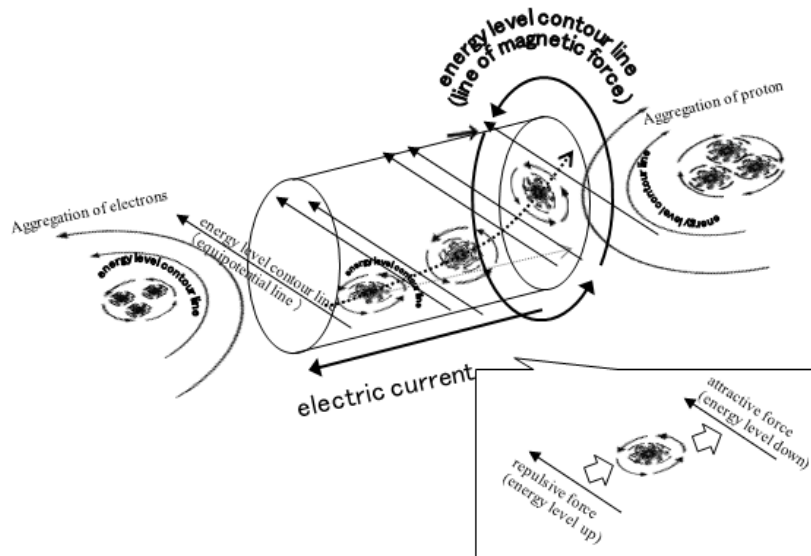


Fig.10. Electric field, electric current, and magnetic field made by electrons' tilting

8. Electromagnetism

8.1. Currently Understanding

In electrodynamics, electric field is explained as the occurrence of an electric field around electric charge, and when electric charge is put inside of this electric field, force is received from the electric field. An electric field is a space that has its properties changed by electric charge. Lines of electric force and equipotential lines are used to express the condition of this electric field. Wikipedia⁶ and Urushibara¹⁰ state these in the statement. Also, when electric current flows, a magnetic field is created around the conductor. Electrodynamics explains that when an electron placed in the magnetic field crosses the equipotential line perpendicularly, it affects the space, and a magnetic field is created perpendicular to the direction of movement of the electron. Urushibara¹⁰ states these in the statement. In elementary particle theory, also, an elementary particle itself has the nature of magnetism. Sakamoto¹¹ states these in the statement. More, electromagnetic waves are waves (undulation) formed by change in electric and magnetic fields of space. The direction of vibrations produced by electric and magnetic fields of electromagnetic waves are at right angles to each other, and the direction of movement of the electromagnetic waves is also at a right angle to this. By the way, it is already known that electric field and magnetic field are the same thing by Maxwell's equations. Furthermore, special relativity suggests that magnetic field is the same as the electric field gauged from another frame of reference. Wikipedia¹² states these in the statement.

8.2. New Understanding

In contrast, the explanation in energy body theory is as follows. A magnetic field is the waves of electrons inclining in a perpendicular direction to the direction of movement. Hence, it might be thought that the lines of magnetic force are the same as the energy lines. But they are a little different. So, the lines of magnetic force are used in energy body theory in the same way as magnetism. When an electron placed in the electric field crosses the energy level contour lines perpendicularly, it is affected by the different energy level contour lines, and tries to tilt perpendicular to the direction of movement of the electron. In other words, there is an electron wave that rotates left around the electric current. This is a magnetic field. In conclusion, electric fields and magnetic fields are both the rotating waves of electrons and protons. Afterword, electric field and magnetic field are the same in the point of the wave of elemental particles. But there are different points. On the one hand, electric field is created by electrons and protons; on the

other hand, magnetic field is created by electrons alone.

8.3. Magnetic Field

It is explained in the last chapter, that electric field is created by the waves of proton and the waves of electron. That is to say a proton makes the positive pole and an electron makes the negative pole. Also, it is explained that magnetic field is created by just only electrons. But there is a question that one factor alone makes two poles of N and S. To this question, energy body theory gives a solution.

Look at the figure.11. That is an electromagnet that is an iron bar is winded by coil. It is obvious that magnetic field is created by only electrons.

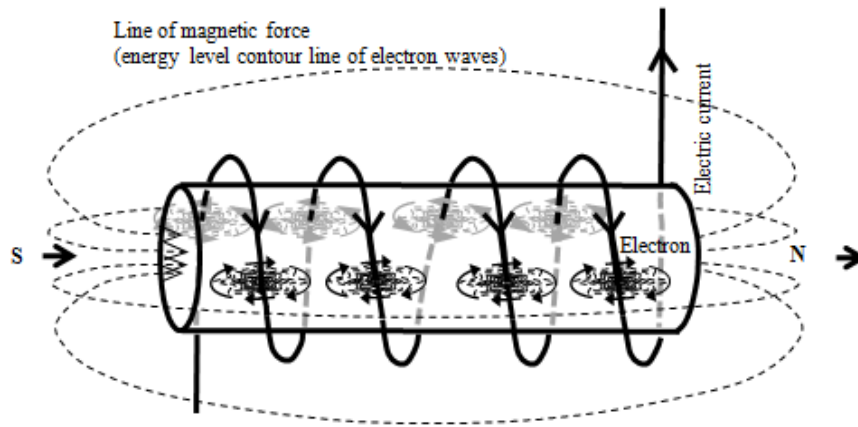


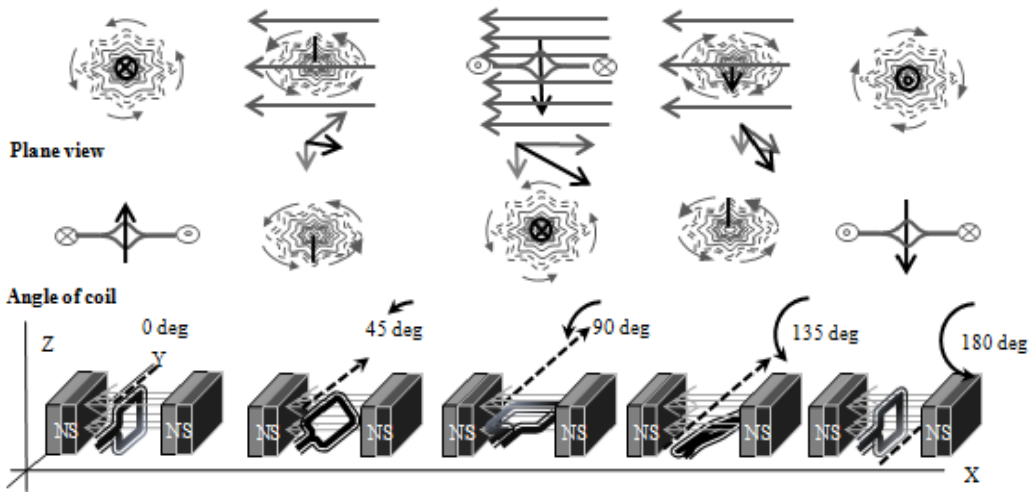
Fig.11. Magnetic field and lines of magnetic force

8.4. Electromagnetic Induction

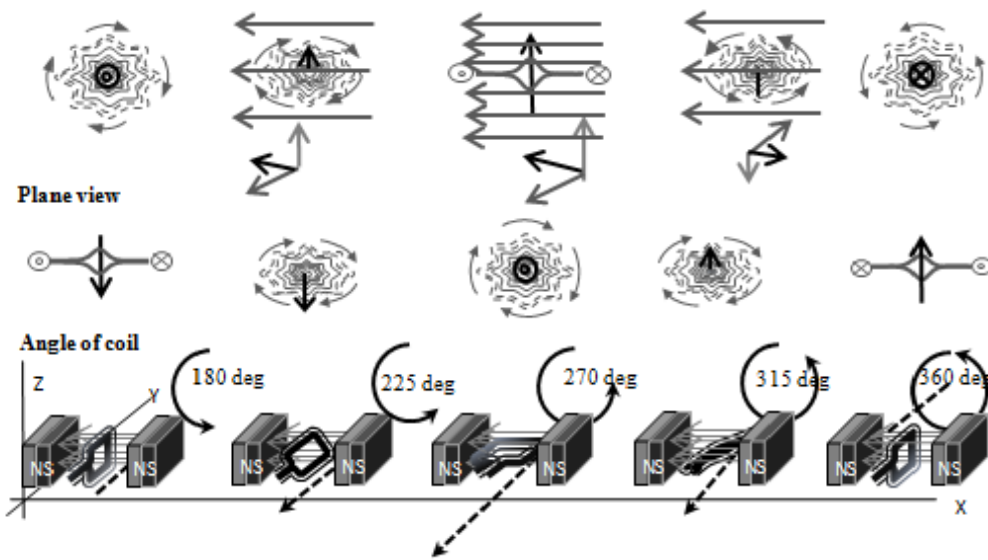
electrons inside coil placed in the magnetic field takes a position at which its orientation is parallel to the lines of magnetic force. And electrons start to move in the same way as in electric field. But one point is different from electric field. Electrons move in a free direction around the lines of magnetic force. That is because the lines of magnetic force are flat. Then, because there are a countless number of electrons within the coil, if averaged as a whole, the flow of electric current becomes zero. It is needed to explain one more reason about the process that an electric current starts to move. If the coil starts to move, the balance is broken down, because electrons receive vector force from the coil, and many electrons start to move in a certain direction. Because of this, electric current flows. This situation is showed on figure.12. The coil is moving down and the distance that electrons move is becoming longer in right side on figure13.

***Position of electron in broken line area of coil**

Front view



Front view



Key: force vectors applied to electrons

- : Force caused by difference in energy levels
- : Force which causes coil rotate
- : Resultant force which causes electrons to move
- ⊙ : Direction (front → back) of magnetic field (electron waves)
- ⊗ : Direction (back → front) of electron waves
- ⊗ : The same (front → back)

Fig.12. Position & movement of electrons in the coil which cross magnetic field

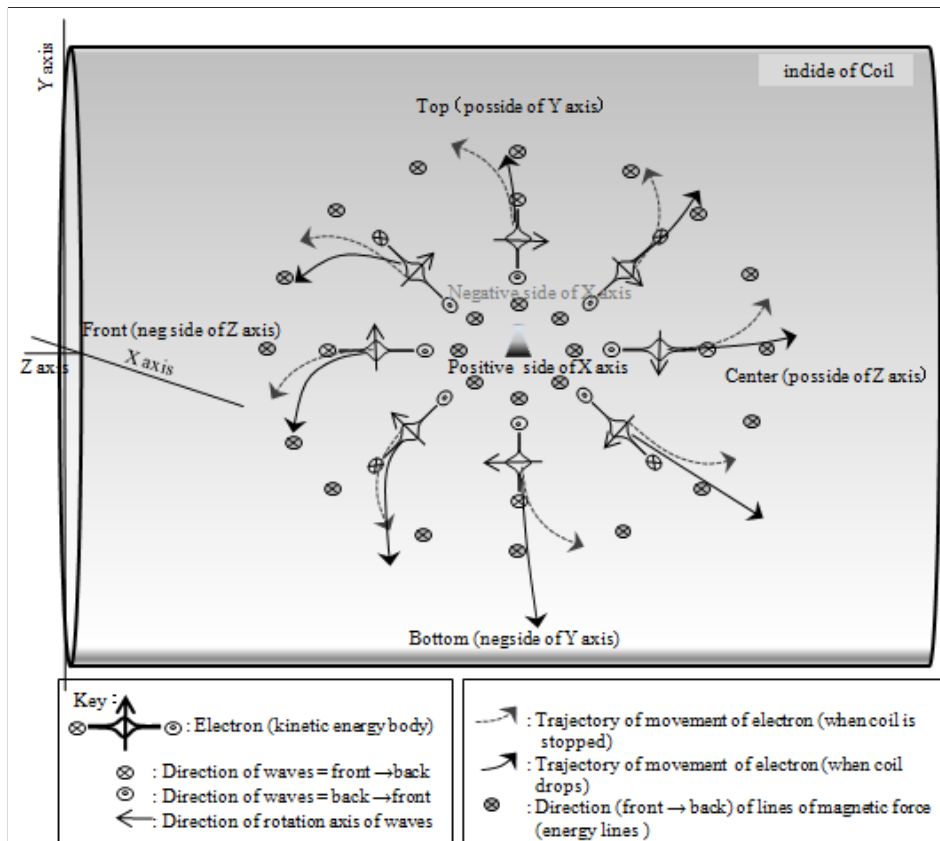


Fig.13. Position of electrons inside coil which crosses magnetic field, & traces of this movement

9. Electromagnetic Waves

The detailed explanation is omitted to avoid taking long time. An average electron during one turn of the coil reverses its direction of movement in a reciprocating motion, making one rotation of its position in a direction perpendicular to the rotation axis of the waves. Electromagnetic waves are the imprints left in static energy body by the reciprocal motion of electrons and the rotation of electrons. The imprints left in static energy body by the reciprocal motion of electrons are electric waves. And the imprints left in static energy body by the rotation of electrons are magnetic waves. This is why electric and magnetic waves appear at right angles, despite the fact they are the same thing.

10. Strong Interaction (The Binding in the Atomic Nucleus)

In this chapter, it is shown that the model of elementary particles depicted by energy body theory can be effectively applied to the strong interaction too, and the strong interaction works by the difference of energy level of energy body under the grand unified theory of energy body.

10.1. Binding of Protons and Protons

The binding of nucleons in the atomic nucleus that is called strong force, is explained by quantum theory in the following way. Protons have an electric charge of +1, so a repulsive force works between the protons. However, in the atomic nucleus, they are bound by nuclear force. This nuclear force, which joins nucleons together, occurs when pi mesons are exchanged between the nucleons. Furthermore, it is currently thought that nucleons are made up of quarks. Futamase¹ states these in the statement.

In contrast, the explanation according to energy body theory is as follows. Fig. 14. Between proton and proton, the waves that rotate right both move in opposite directions. Thus, as with electrons, there is a repulsive force at work. When a meson, which rotates left, is interposed between the two protons, the direction of movement of the waves between the nucleons becomes the same between each particle. Thus, there is a force between the proton and the meson, which works toward the space in between them. As a result, the protons bind together. By the way, in the case of electrons and protons, the electron tilts, due to the fact that it is rotating around the proton. It settles on one single orbit, where the number of wave nodes of bound proton area equals an integral multiple of the number of wave nodes of the electron. However, in the case of mesons and protons, it is not possible for the meson to tilt and settle on one orbit like an electron does. The reason for this is that the direction of movement of the waves between the two protons and one meson all flow in the same direction and energy levels drop equally. Because the energy line is continuous, there are a countless number of orbits between the proton and meson, where the number of wave nodes of the proton do not equal an integral multiple of the number of wave nodes of the meson. Therefore, strictly speaking, they do not overlap. However, when pushed by a strong outside force, overlap can occur. In a place with low energy levels where the waves of protons and the waves of mesons overlap on a level plane, the meson waves break down and are swallowed by the proton waves. However, in places close to the center of the meson, the meson waves are strong, because they break out of the level surface of the proton waves. As a result, the meson wave energy level is stabilized in a position where it does not break against the energy level of the proton waves, and where the number of proton wave nodes in the binding area equals an integral multiple of the number of meson wave nodes, as occurs between protons and electrons.

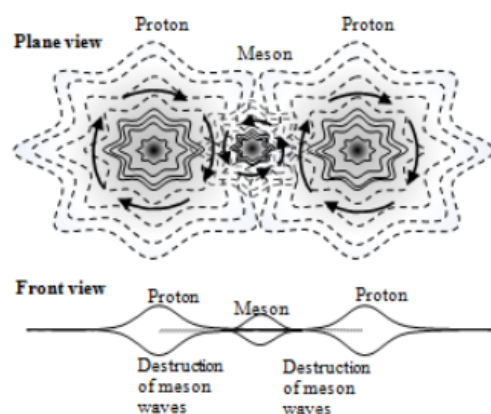


Fig.14. Role of meson in the atomic nucleus

10.2. Binding of Protons and Neutrons

10.2.1. Creating of Neutrons

Neutrons are elementary particles with an electric charge of zero.

First of all, a neutron has zero electric charge—energy body theory predicts that when an electron and proton combine, a neutron is created, resulting in the property of having zero electrodes. This is explained as follows. The waves of electrons and protons have opposite rotation to each other, counter-clockwise and clockwise respectively. However, since they flow in the same direction between the electron and proton, it is naturally easy for them to come close together. However, the number of wave nodes cannot be made consistent in the nuclear part of electrons and protons. At the base, the wave is a thin level plane, so it is possible to pick up the wave node resolution. But the waves become dense in the nuclear area, so it is not possible to pick up the wave node resolution. As a result, even when there is attraction between electrons and protons, it does not approach the nuclear area. So, if outside force is applied and it enables the electron to penetrate into the nucleus of the proton, binding is possible, since both protons and

electrons are energy body waves. Since the waves' directions of movement are opposite to each other, the waves of the proton and those of the electron that enters into the proton influence each other, forming the properties of a neutron as follows. Fig. 15 & Fig. 16

- (1) When the waves of both proton and electron leave the nuclear area, the energy levels quickly drop, and both are around the same energy level. Because the waves' directions of movement are opposite, they negate each other, and the properties of the wave become undetectable. At this time, the electron does not incline, because of coming close to the proton.
- (2) In the nuclear region of the proton and electron, the waves' directions of movement are opposite and they negate each other, but because protons are far larger than electrons, the properties of the proton waves, which rotate right, remain.
- (3) Finally, waves display the property of rightward rotation in the nuclear of the neutron, but they are elementary particles that do not show wave properties far away from the base. For this reason, neutrons have no properties like the electric charge of protons, but on the other hand, in the nuclear region, they have the same properties as protons.

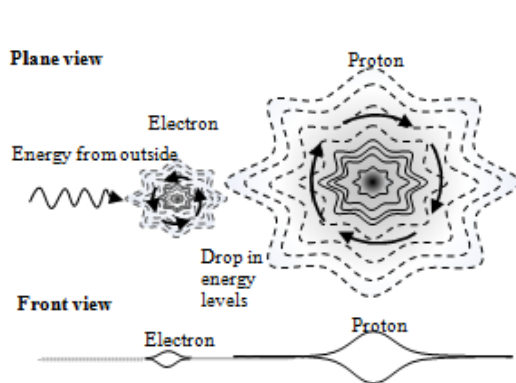


Fig.15. Formation of neutrons in the atomic

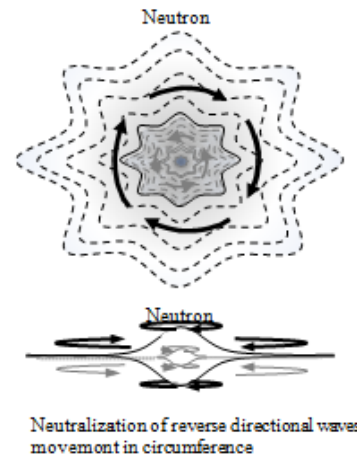


Fig.16. Establishment of neutron

10.2.2. Binding of Protons and Neutrons

The waves of both neutrons and protons rotate to the right. This is the same connection as the binding of proton and proton in the atomic nucleus, so neutrons and protons bind through a meson interposed between them. Fig. 17

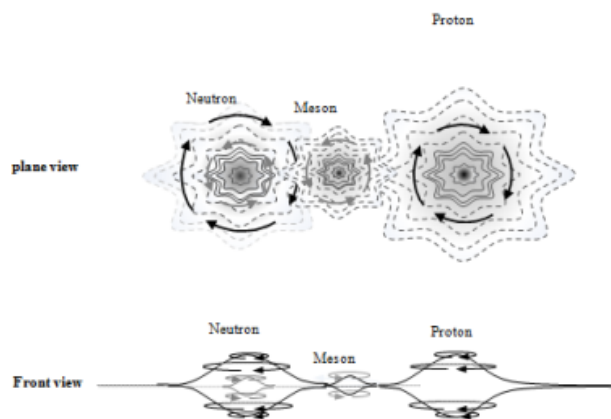


Fig.17. Binding of proton and neutron in atomic nucleus

11. Weak Interaction

In beta decay, neutrons change into protons releasing w bosons which immediately decay to electrons and antineutrinos. That is caused by weak force in quantum theory. Futamase¹ states these in the statement. Compared with that, energy body theory states as follows. Electrons with rotating waves to the left are pushed into protons with rotating waves to the right by outer force and neutrons are made up. This is described in the last chapter. The decay of neutrons is the same that neutrons go backward their original form.

12. Gravity

A grand unified theory that unifies the three of four fundamental forces, strong interaction, weak interaction and electromagnetic interaction, without gravitational interaction, is evolving over time with gauge theory which predicts that all of three forces arise from exchange of gauge bosons between fermions. Also, superstring theory is attempted. But they are unsuccessful, because the comprehension to gravity has not advanced. Futamase¹ and Wikipedia² state these in the statement. Gravity is unmasked by the way of thinking in energy body theory, the same as the other three fundamental forces. The true character of gravity is the distortion of the energy level of static energy body, which is created when a star is formed. Next, it is explained how the distortion of the energy level of static energy body is generated.

There is a vast expanse of gas in the space. This dispersed gas converges in the center in due time and makes an enormous lump of gas. At this first stage, the force that attracts gas is the binding energy from the difference of energy level in rotating waves of elementary particles. That is electromagnetism.

At the same time of the accumulation of gas, static energy body starts to collapse. And, the traces of elementary particles would be left there, if they were not supplemented. But, static energy body flows into there not to make a gap. After all, as elementary particles expanding in the space accumulate into one point, static energy body flows into the traces of elementary particles from the outside of the space. To be brief, a part of static energy body flows into a narrow space from a wide space. Next, at this time, a part of static energy body in the outer space collapses into the traces of static energy body just mentioned a little while ago. The expression “collapse” is used because when the bottom of a vessel that is shaped like a cone of an hourglass is opened, the dust that enters into the vessel falls only into a certain area. Whilst expanding along with the cone-shaped vessel, the collapsed particles pile up. Static energy body is the equivalent of the dust. These supplements and collapses of static energy body and its traces are repeated in the same way until the end of space.

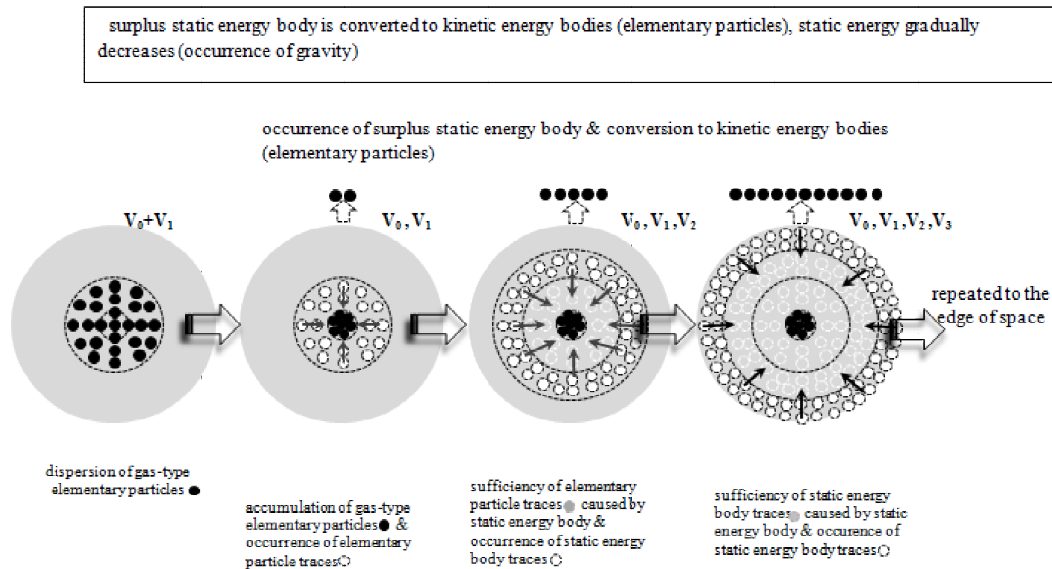


Fig.18. Process of creation of gravity owing to chain collapse and surplus occurrence of static energy body linked to accumulation of enormous elementary particles

By the way, because a part of static energy body flows into a narrow space from a wide space, some static energy body exists that cannot enter into the narrow space. So, this surplus static energy body is compressed by the narrowing of space, entering into a state of high energy and becomes high energy; thus, converting into kinetic energy bodies. This is the reason elementary particles are created. As a result of this conversion, static energy body reduces from the space. On the other hand, because static energy body reduced in the universe as a whole, there is a space where there is a difference in energy. But space remains as if it were before. And there is deformation of energy level in static energy body. This is explained by using an illustration of the cross-section of the spherical space Fig.18. This is the process of gravity field creation. And as this gravity attracts more gas, a star grows up. The force that objects come under is proportional to the decreasing rate in the energy level of the static energy body. The force (acceleration g) that objects come under is gotten by multiplying the decreasing rate by the standard energy level per unit of the static energy body.

12.1. Working out the Gravity Equation by Energy Body Theory

Next, let us try to get acceleration g under energy body theory. But the detail is omitted here.
Fig19

$$g = \frac{D_n}{E_s} \times e_u$$

g : acceleration that is applied to the object

D_n : The surplus static energy body (the difference of the volume of static energy body between E_{n+1} and E_n ∴ $D_n = E_{n+1} - E_n$, which changes into kinetic energy bodies.

E_s : Volume of energy of static energy body in standard state, in the space of radius R .

e_u : Unit energy volume in standard state of static energy body.

(NB: e_u is a value that is determined by the actual measurements.)

$$g = \frac{M \times \frac{6}{r} \times \delta_0^{-\frac{1}{3}} \times \frac{3}{4\pi} \times \delta_1^{-\frac{1}{3}} \times e_u}{R^2} = M \frac{G}{R^2}$$

δ_1 : The density of the gas that is distributed in the space of radius $r+h$.

δ_0 : The density of star of radius r

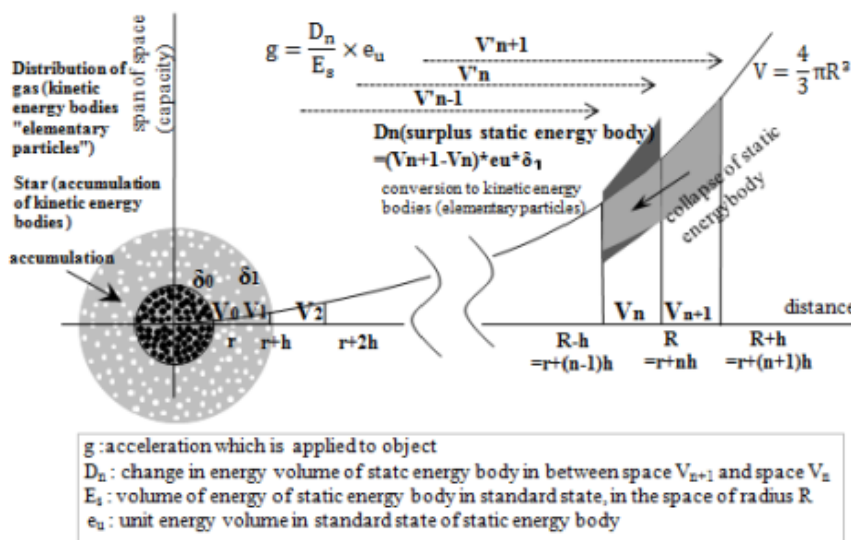


Fig.19. Gravitational acceleration by energy body theory

13. Dark Energy

By the former chapter, it is found that the dark energy field is generated at the same time of creation of the gravity field. The chain of collapse of static energy body which is explained by the creation process of gravity does not continue perpetually. Because outer space is static energy body, it does not span infinitely, but is a finite existence. Because there is no static energy body outside of the space in the end of space, the static energy body must be supplemented from inside the space. In other words, following the creation of gravity and the reverse process, there is a tendency to maintain the static energy body. However, the shortage of static energy body is not the same as it was before the creation of gravity. This is because when gravity is created, the collapse of static energy body advances from large space into small space, and the shortage of static energy body, is 100% supplemented. Even so, because in this case, the supplementation of static energy body is from small into large space, if the shortage of the static energy body is not 100% supplemented, it remains insufficient. The cause of this is what is called dark energy. If we say that a difference in energy levels in the gravitational field occurs as the bending of space, we can also say that effectively, a difference in energy levels occurs in the dark energy field. The force (acceleration g_B) that objects come under, when a star is born, is gotten by the next equation. But the dark energy fields provided by many stars are united to one dark energy field. So, complicated calculation are needed to get the force (acceleration g_B).

$$g_B = -G \frac{M}{(R_H - R_h)^2}$$

R : Distance from star to object.

R_H : Distance from end of space to star.

R_h : Distance from end of space to object.

14. Different Points between Gravity and Anti-Gravity

The differences between the gravitational and anti-gravitational fields are shown below.

- (1) While the direction of acceleration in the gravitational field moves toward the center of the star, in the anti-gravitational field, it moves toward the end of space. Thus, in the anti-gravitational field, not only objects but also the star itself receives anti-gravitational acceleration.
- (2) In the space of the gravitational field, the energy volume of static energy body maintains a standard level, and an observer in this location would be unable to detect change in these levels. This is to say that the gravitational field is bent by the change in the energy volume of static energy body. However in the anti-gravitational field, the static energy body volume actually is decreased, and an observer in this area would be able to detect changes in these levels.
- (3) The gravitational field depends on the star that caused it. If the star moves, the gravitational field also moves. In contrast, once created, the anti-gravitational field begins to exist independently from the star by which it was caused. Therefore, without the influence of other gravitational fields, the reverse gravitational field will remain in the location in which it was created, even if the star moves.
- (4) In terms of connection to other gravitational fields, even if two or more gravitational fields overlap, each gravitational field exists independently, and each have independent gravitational influence on objects.

In contrast, when two or more anti-gravitational fields overlap, they affect each other and a new anti-gravitational field is created. In other words, at the same time that objects in the gravitational field of the star are influenced by the star's gravity g , they also receive anti-gravitational acceleration g_B in the direction of the end of space. Therefore, while the object falls toward the center of the star, it is also being pulled in the direction of the end of space at the same time. Acceleration toward the end of space is also applied to the star that created the anti-gravity. However, the speed and direction in which the object and star are pulled are decided by the distance from the end of space.

Therefore, they are different depending on the location of the star in space. The nearer the star is to the end of space, the greater the acceleration applied to the object in the anti-gravitational field.

15. The Space Circulation System of Energy Body

Incidentally, when gravity occurs, there is a conversion from static energy body to elementary particles; therefore around of the center of the universe the volume of static energy body is reduced. Moreover, anti-gravity occurs because the volume of static energy body drops around of the end of the universe, and stars are conveyed to the end of the universe by anti-gravity. After the stars are moved to the verge of space, they blow up, and turn into gas. And before long, it is thought that elementary particles of gas will be absorbed into static energy body. And again, stars are born around of the center of the universe. And these are repeated. Incidentally, it indicates that the explosions of stars could be the cause of the cosmic microwave background. This suggests that the cosmic microwave background is not the evidence of the so-called Big Bang, but the large circulation system of static energy body.

16. Conclusion

Energy body theory threw a new light on the theory for everything that unifies four fundamental forces, strong interaction, weak interaction, electromagnetic interaction and gravitational interaction. That is, all interactions are caused by the difference of energy level of energy body. And it went farther than that what is dark energy and what is the structure of the universe are found. Also, the model of elementary particles based on energy body theory gave a new interpretation. Hereafter, it is a present subject to make numerical formulas of four fundamental forces, on the bases of energy body theory. Also, this text will be a start point for more research which is the directions of vibration of energy cell bodies and verifications in detail with fundamental particles.

17. References

References

1. Toshifumi Futamase, Zukai Zetugaku, Soryushi, 2805. (Natumesha.Inc, Tokyo,2001)[in Japanese]
2. Wikipedia, Grand Unified Theory, (http://en.wikipedia.org/wiki/Grand_Unified_Theory).
3. Hitoshi Mizutani(eds), Newton Bessatu Mirumirurikaidekiru Ryoshiron Kaiteiban. 66884-08 (Newton Press. Inc, Tokyo, 2009) [in Japanese]
4. NHK Enterprises. Inc. 21, NHK Special, Uchu Michi eno Daikiko, Dai Hasshu ~Uchu ni Owari wa aruka?~, DVD,(NHK Software, Tokyo,2002) [in Japanese]
5. Cimarosa, ButurigakuKissashitu Wakarumadesoryushiron 【Nyumonhen】 [in Japanese], (http://www1.odn.ne.jp/~cew99250/html/S_4.html#0405)
6. Wikipedia, Electricity (<http://en.wikipedia.org/wiki/Electricity>)
7. Wikipedia, Mass (<http://ja.wikipedia.org/wiki/%E8%B3%AA%E9%87%8F>)
8. Hiroyuki Sakamoto, Denki no Rekishi Irasutokan, [in Japanese] (<http://www.geocities.jp/hiroyuki0620785/ryosi/zeemaneffect.htm>)
9. Hiroyuki Sakamoto, Denki no Rekishi Irasutokan, [in Japanese] (<http://www.geocities.jp/hiroyuki0620785/k2jiki/magspin.htm>)
10. Akira Urushibara, Buturi I . II .[Denjiki Hen],Dai4satu.3080.(Chukeishuppan. Inc, Tokyo,2009). [in Japanese]
11. Hiroyuki sakamoto, Denki no Rekishi Irasutokan, (<http://www.geocities.jp/hiroyuki0620785/k2jiki/magspin.htm>) [in Japanese]
12. Wikipedia, Electromagnetic radiation (http://en.wikipedia.org/wiki/Electromagnetic_radiation)

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