

Quantum Field versus Gravitational Field and Electrical Field and Quantum Field Theory Based on Yangton and Yington Theory

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[Abstract]

According to Quantum Field Theory, it is suggested that all subatomic particles are made of the surges of quantum fields. Many scientists believe that those quantum fields are preexisting infinitive fields in the universe such that the questions regarding the existence and propagation of the quantum fields can be avoid. In addition, based on Quantum Field Theory and Yang Mills Theory, Standard Model containing a group of subatomic particles can be derived by preexisting infinitive quantum fields with a mathematical model of non-abelian symmetry.

In contrast, according to Yangton and Yington Theory, all subatomic particles are composed of string structures built upon Wu's Pairs (building blocks of the universe) with attractive Force of Creation (Fundamental Force of the Universe). Elementary subatomic particles are composed of Wu's Pairs bound together by string force induced from Force of Creation. Composite subatomic particles are composed of elementary subatomic particles bound together by four basic forces generated by string force induced from Force of Creation.

Because preexistence and infinitive length of the field is irrelevant to Standard Model derived from the mathematical model of non-abelian symmetry, it is believed that four basic forces each having a short range field generated by the corresponding subatomic particle, and string force having a short range field (Higgs Field) generated by Wu's Pairs (Higgs Bosons, the mass particle), can be considered as the quantum fields in Quantum Field Theory. Consequently, these short range fields made of four basic force and string force generated by the corresponding subatomic particles can be applied with a mathematical model of non-abelian symmetry to develop Standard Model no matter of the preexistence and infinitive length of the field.

Gravitational field and electrical field are infinitive fields. Gravitational field is the field of static remote gravitational force (Universal Gravitation) applied on a unit mass which can be calculated by Newton's Law of Universal Gravitation. Universal Gravitation (Static Remote Gravitational Force) is a summation of gravitational forces generated by the contact interaction between two groups of gravitons, one group from target object and the other group through static graviton flux from parent object. It is different from Gravitational Force which is a single gravitational force generated by the contact interaction between two adjacent gravitons on the same object. Similarly, electrical field is the field of static remote electrical force (coulomb's Force) applied on a unit positive charge. It is different from Electrical Force which is a single electrical force generated by the contact interaction between two adjacent charged particles on the same object. Both fields generated by Gravitational Force (not Universal Gravitation) and Electrical Force (not Coulomb's Force) are considered quantum fields in Quantum Field Theory.

Because preexisting infinitive field is irrelevant to Standard Model derived from the mathematical model of non-abelian symmetry, it is believed that four basic forces each having a short range field generated by the corresponding subatomic particle, and string force having a short range field (Higgs Field) produced by Wu's Pairs (Higgs Bosons, the mass particle), can be considered as the quantum fields in Quantum Field Theory. As a consequence, these short range fields including four basic force and string force generated by the corresponding subatomic particles, together with a mathematical model of non-abelian symmetry, can also be used to develop Standard Model. In addition, despite relativism and uncertainty principle, the theories of mass and energy transformation, and mass and force cluster formations are compatible with Yangton and Yington Theory, therefore, Yangton and Yington Theory can be considered as the backbone of Quantum Field Theory. Furthermore, because all these short range fields including four basic force and string force are generated from Force of Creation, Unified Field Theory can also be proved.

[Keywords]

Quantum Field Theory, Standard Model, Yangton and Yington Theory, Gravitational Field, Graviton Flux, Universal Gravitation, Electrical Field, Quantum Gravity Theory, Unified Field Theory, String Theory, Four Basic Forces, Special Relativity, General Relativity, Quantum Mechanics.

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I. Introduction

According to Quantum Field Theory, it is suggested that all subatomic particles are made of the surges of quantum fields. Many scientists believe that those quantum fields are preexisting infinitive fields in the universe such that the questions regarding the existence and propagation of the quantum fields can be avoid. In addition, based on Quantum Field Theory and Yang Mills Theory, Standard Model containing a group of subatomic particles can be derived by preexisting infinitive quantum fields with a mathematical model of non-abelian symmetry.

In contrast, according to Yangton and Yington Theory, all subatomic particles are composed of string structures built upon Wu's Pairs (building blocks of the universe) with attractive Force of Creation (Fundamental Force of the Universe). Elementary subatomic particles are composed of Wu's Pairs bound together by string force induced from Force of Creation. Composite subatomic particles are composed of elementary subatomic particles bound together by four basic forces generated by string force induced from Force of Creation. Instead of being a preexisting infinitive field, the quantum fields of four basic forces are generated by the corresponding Elementary Subatomic Particles, also Higgs Field (string field) is generated by Higgs Bosons (Wu's Pairs). Furthermore, these short range fields can be applied with a mathematical model of non-abelian symmetry to develop Standard Model no matter of the preexistence and infinitive length of the field.

Gravitational field and electrical field are infinitive fields. Gravitational field is the field of static remote gravitational force (Universal Gravitation) applied on a unit mass which can be calculated by Newton's Law of Universal Gravitation. Universal Gravitation (Static Remote Gravitational Force) is a summation of gravitational forces generated by the contact interaction between two groups of gravitons, one group from target object and the other group through static graviton flux from parent object. It is different from Gravitational Force which is a single gravitational force generated by the contact interaction between two adjacent gravitons on the same object. Similarly, electrical field is the field of static remote electrical force (coulomb's Force) applied on a unit positive charge. It is different from Electrical Force which is a single electrical force generated by the contact interaction between two adjacent charged particles on the same object. Both fields generated by Gravitational Force (not Universal Gravitation) and Electrical Force (not Coulomb's Force) are considered quantum fields in Quantum Field Theory.

It is the purpose of this paper to give detailed discussions to the following questions: (1) If quantum fields are preexisting infinitive fields that generate corresponding subatomic particle, or the other way around, they are short range fields of string force and four basic forces that are generated by subatomic particles? And (2) what are the differences between quantum fields and gravitational field, as well as that of electrical field?

II. Yangton and Yington Theory

Yangton and Yington Theory [1] is a hypothetical theory based on a superfine circulating Yangton and Yington Antimatter particle pair with inter-attractive Force of Creation, which is proposed the building blocks of the universe. Yangton and Yington Theory can be used to explain the formation of subatomic particles and unified field theory, as well as the correlations between space, time, energy and matter in the universe. Therefore, it is believed that Yangton and Yington Theory is a theory of everything.

A. Wu's Pairs and Force of Creation

According to Five Principles of the Universe [2], with the external energy generated from Big Bang explosion, a superfine circulating Yangton and Yington Antimatter particle pair with inter-attractive Force of Creation, named "Wu's Pair" (Fig. 1) can be formed as a permanent matter. These Wu's Pairs are the fundamental building blocks of all the matters in the universe such as photons, quarks, electrons, positrons, neutrons, protons, etc [3].

The inter-attractive "Force of Creation" between Yangton and Yington is the fundamental force of the universe, which can be used to generate the String Force for the formation of elementary subatomic particles such as quarks, leptons, gluons and bosons [3]; as well as the Four Basic Forces induced from String Force, including gravitational force, electromagnetic force, weak force and strong force for the formation of composite subatomic particles such as proton, neutron and nucleus [3].

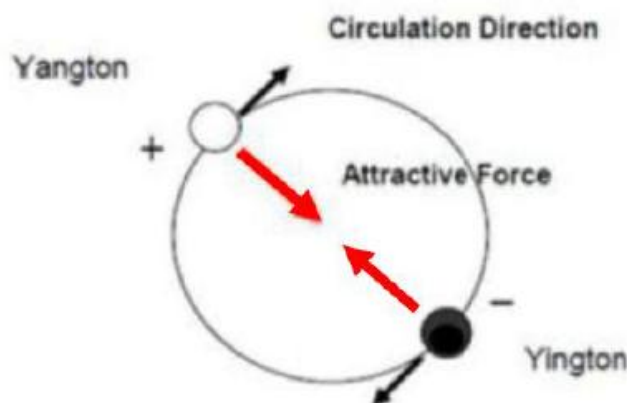


Fig. 1 Wu's Pair - a Yangton and Yington circulating pair.

B. String Force and String Structures

When two Wu's Pairs come together with the same circulation direction (both spin up or spin down), they stack up on each other at a locked-in position, where Yangton of the first Wu's Pair lines up to the Yington of the second one due to the attraction between Yangton and Yington particles. This induced force between the two Wu's Pairs in the same circulation direction is called "String Force". (There are zero net interactions between two adjacent Wu's Pairs in opposite circulation directions because of the cancellations of attraction and repulsion forces between Yangtons and Yingtons). By repeating the stacking processes, strings (such as gravitons), rings (such as neutrons and protons), balls (such as electrons and positrons) and other related structures made of Wu's Pairs called "String Structures" [3] can be formed (Fig. 2), which is very well in compliance with the "String Theory" [4].

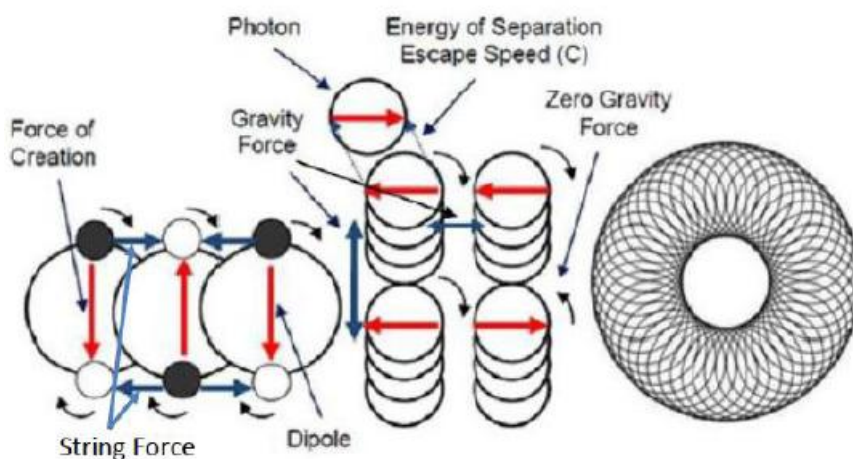


Fig. 2 Wu's Pairs stack up in a preferred direction by string force to form string and ring structures.

C. Standard Model and Subatomic Particles

Standard Model [5] is a group of subatomic particles which is derived from a mathematical model based on Quantum Field Theory [6] and Yang Mills Theory [7]. According to Standard Model, there are two types of subatomic particles: elementary particles, which according to current theories are not made of other particles, and composite particles which are made of elementary particles.

The elementary particles of the Standard Model include:

- Six flavors of quarks: up, down, bottom, top, strange, and charm.
- Six types of leptons: electron, electron neutrino, muon, muon neutrino, tau, tau neutrino.
- Twelve Gauge Bosons (force carriers): the photon of electromagnetism, the three W and Z Bosons of the weak force, and the eight gluons of the strong force.

- The Higgs Boson.

Various extensions of the Standard Model predict the existence of an elementary Graviton particle and many other elementary particles.

Composite subatomic particles such as protons or atomic nuclei are bound states of two or more elementary particles. For example, a proton is made of two up quarks and one down quark, a neutron is made of two down quarks and one up quark, while the atomic nucleus of Helium-4 is composed of two protons and two neutrons.

In contrast to Standard Model, based on Yangton and Yington Theory, all elementary subatomic particles including quarks, leptons, Gauge Bosons, gluons, photon, Higgs Boson and Graviton are composed of Wu's Pairs, the building blocks of all matters, with a string structures that are glued together by string forces induced from Force of Creation between two adjacent Wu's Pairs. Furthermore, composite subatomic particles are made of elementary subatomic particles that are glued together by four basic forces including gravitational force, electromagnetic force, weak force and strong force induced from string force based on Force of Creation subject to the subatomic structures and their interactions.

D. Graviton and Gravitational Force

When two Wu's Pairs come together with the same circulation direction (both spin up or spin down), they can stack up on each other at a locked-in position, where Yangton of the first Wu's Pair lines up to the Yington of the second one due to the attraction between Yangton and Yington particles. By repeating the stacking processes, strings (such as gravitons), rings (such as neutrons and protons), balls (such as electrons and positrons) and other related structures composed of Wu's Pairs can be formed which are called "String Structures".

Furthermore, when two string structures come together side by side, no matter the circulation directions, they can adjust themselves to attract each other at the contact position by a group of string forces generated between the Yangtons of one string structure and the Yingtons of the other string structures in each cycle of circulation. This group of attraction only string forces is known as "Gravitational Force" (Fig. 3) and all the string structures that can produce the gravitational force are called "Gravitons" [3] including quarks, leptons and bosons, except photon and gluons without string structures and adjustable circulations.

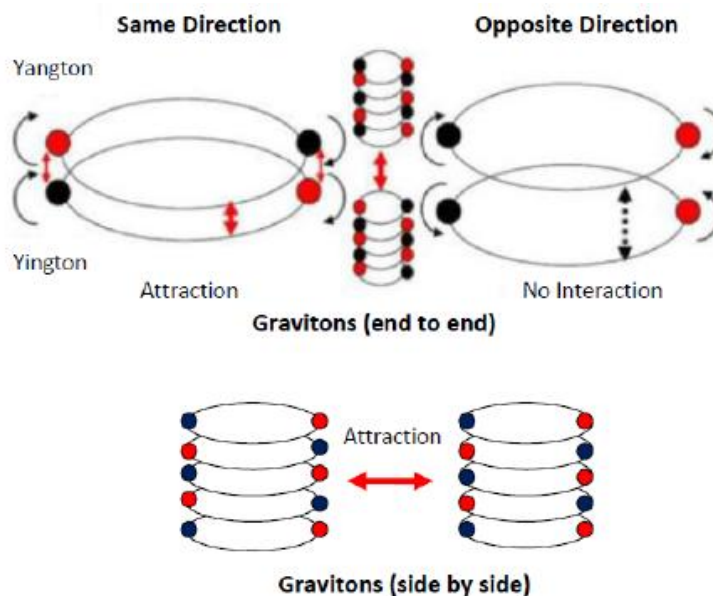


Fig. 3 Gravitational force between two graviton particles

E. Graviton Radiation and Contact Interaction – Remote Gravitational Force

Like photon, graviton can also be radiated from a parent object by absorbing thermal or kinetic energy. This is called "Graviton Radiation". As a graviton emitted from the parent object reaches the target object, it makes an interactive contact with the graviton on the target object side by side where the two gravitons can adjust themselves to attract each other by forming a group of string forces generated between the Yangtons of one graviton and the Yingtons of the other graviton in each cycle of circulations. This is called "Contact Interaction" and the whole process is called "Graviton Radiation and Contact Interaction" [8].

The gravitational force generated by the contact interaction between the two gravitons is called "Remote Gravitational Force". Remote Gravitational Force is "a summation of gravitational forces" generated by the

contact interaction between two groups of gravitons, one group from target object and the other group through graviton flux from parent object. It is different from “gravitational force” which is “a single gravitational force” generated by the contact interaction between two adjacent gravitons on the same object.

Universal gravitation is the static remote gravitational force generated by Graviton Radiation and Contact Interaction, instead of propagation of gravitational force. In fact, gravitational force cannot propagate, only gravitons move through graviton flux by graviton radiation.

F. Graviton Flux – Static Graviton Flux and Dynamic Graviton Flux

Graviton flux is generated by graviton radiation from parent object to target object. There are two types of graviton fluxes, Static Graviton Flux and Dynamic Graviton Flux [9]:

(1) Static Graviton Flux is the graviton flux generated between two stationary objects through graviton radiation from parent object to target object. Static Graviton Flux is proportional to graviton concentration vector, as is to the gravitational field.

(2) Dynamic Graviton Flux is the additional graviton flux to Static Graviton Flux that is generated by the relative motion between the target object and the parent object. Dynamic Graviton Flux flows in the opposing direction to the motion of the target object.

G. Newton’s Law of Universal Gravitation

According to Particle Radiation and Contact Interaction Theory based on Yangton and Yington Theory, applying Static Graviton Flux as the mechanism, Newton’s Law of Universal Gravitation can be derived to calculate the static remote gravitational force (universal gravitation) between two objects in stationary or in long distance where Dynamic Graviton Flux is negligible [10].

Like a photon emitted from a heat source by absorbing thermal energy to overcome the string force, graviton can also be emitted from an object by absorbing thermal energy to overcome the gravitational force. It is obvious, for two stationary objects, Static Graviton Flux, the gravitons emitted from the parent object reaching the target object per unit area per unit time (I), should be proportional to the mass of the parent object (m_1), and also inversely proportional to the square of the distance (r) between parent object and target object (Fig. 4). Therefore,

$$I = i m_1 / r^2 r$$

Where I is the graviton flux vector, i is graviton flux constant, m_1 is the mass of parent object, r is the emitting distance from m_1 and r is the unit vector with emitting direction away from m_1 .

Furthermore, according to Graviton Radiation and Contact Interaction Theory, the total remote gravitational force (F) generated by contact interaction between the gravitons emitted from the parent object to the target object and the gravitons on the target object should be proportional to both the flux of the gravitons (I) emitted from the parent object to the target object in compliance with Graviton Radiation, and the total quantity of the gravitons on the target object which is proportional to the mass of the target object (m_2) in accordance to Contact Interaction. (Fig. 4) Therefore,

$$F_{12} = j (i m_1 / r^2) m_2 S$$

Where F_{12} is the remote gravitational force applied on to target object m_2 by parent object m_1 , j is graviton contact interaction constant, i is graviton flux constant, m_1 is the mass of parent object and m_2 is the mass of target object, r is the distance between m_1 and m_2 and S is the unit vector with direction from m_2 to m_1 .

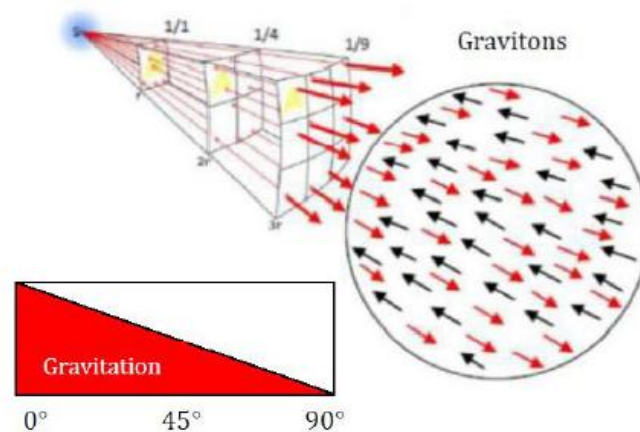


Fig. 4 Gravitational force caused by Graviton Radiation and Contact Interaction.

Furthermore, because $ij = ji$, therefore gravitational force F_{12} applied on to target object m_2 by parent object m_1 is identical to the gravitational force F_{21} applied on to parent object m_1 by target object m_2 .
As a result, given $G = ij$, Newton’s Law of Universal Gravitation (Fig. 5) can be derived as follows:

$$\mathbf{F} = G (m_1 m_2 / r^2) \mathbf{S}$$

Where \mathbf{F} is static remote gravitational force (universal gravitation), G is the gravitational constant $6.674 \times 10^{11} \text{ N m}^2 \text{ kg}^{-2}$, m_1 is the mass of parent object and m_2 is the mass of target object, r is the distance between m_1 and m_2 and \mathbf{S} is the unit vector with direction from m_2 to m_1 .

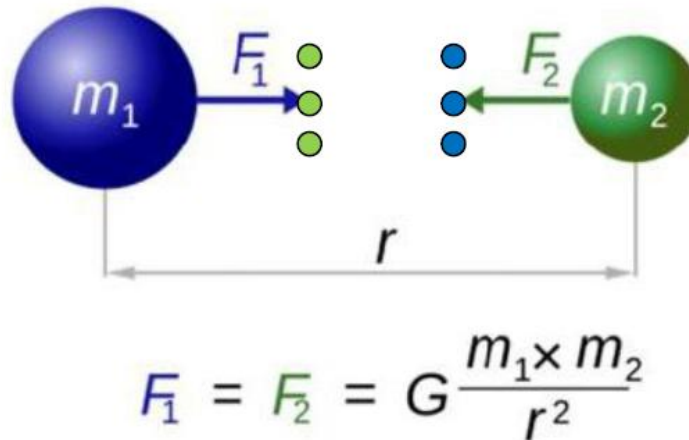


Fig. 5 Remote gravitational force between two objects.

H. Gravitational Field and Graviton Flux and Concentration of Graviton Vectors

Gravitational field by definition is the total remote gravitational forces generated from all the objects in the universe applied on a unit mass (1 Kg) at a point in space. According to Particle Radiation and Contact Interaction Theory, gravitational field is proportional to the summation of the graviton fluxes emitted from all the parent objects (in stationary or long distance) in the universe to a unit mass at a point in space. Therefore,

$$\mathbf{F}_g = 1 \text{ Kg} \sum G (M/r^2) \mathbf{S}$$

Where \mathbf{F}_g is the gravitational field, G is the gravitational constant $6.674 \times 10^{11} \text{ N m}^2 \text{ kg}^{-2}$, M is the mass of a parent object, r is the distance from the parent object to the unit mass and \mathbf{S} is the unit vector with direction from the unit mass to the parent object.

Since the graviton flux from each parent object to the point is constant, therefore the concentration of graviton vectors (graviton with direction) contributed from each parent object to the point is also constant, and they are proportional to each other.

$$c \propto M/r^2$$

Because

$$\mathbf{F}_g = 1 \text{ Kg} \sum G (M/r^2) \mathbf{S}$$

Therefore,

$$\mathbf{F}_g = \sum K c \mathbf{S}$$

Where \mathbf{F}_g is gravitational field, K is concentration constant, c is the concentration of graviton vectors and \mathbf{S} is the unit vector with direction from the unit mass to the parent object.

As a result, gravitational field on a unit mass at a point in space is proportional to the total fluxes of graviton vectors, as is the total concentrations of graviton vectors at the point in space [10], thus gravitational field is an infinitive field distributed continuously over the entire universe.

I. Electron Radiation and Contact Interaction – Remote Electrical force

Electron radiation is the emission of electrons from a parent negative charged particle by absorbing thermal or kinetic energy. This is called “Electron Radiation”. It is different from electromagnetic wave which is the emission of photon from a parent object by absorbing thermal or kinetic energy. As an electron emitted from the parent negative charged particle reaches the target negative charged particle, it makes an interactive contact with the electrons on the target negative charged particle where repulsive electrical force can be generated. This is called “Contact Interaction” and the whole process is called “Electron Radiation and Contact Interaction” [8].

The repulsive electrical force generated by the contact interaction between the two electrons is called “Remote Electrical Force”. Remote Electrical Force is “a summation of electrical forces” generated by the contact interaction between two groups of electrons , one group from target negative charged particle and the other group through electron flux from parent negative charged particle. It is different from “electrical force” which is “a single electrical force” generated by the contact interaction between two adjacent electrons on the same charged particle.

Coulomb's Electrical Force is the static remote electrical force generated by Electron Radiation and Contact Interaction, instead of propagation of electrical force. In fact, electrical force cannot propagate, only electrons move through electron flux by electron radiation.

J. Coulomb's Law of Electrical Force

Similar to the static remote gravitational force between two objects, the static remote electrical force between two charged particles is proportional to the charge of parent particle (q_1) and the charge of target particle (q_2), and inversely proportional to the square of the distance (r) between the parent particle and the target particle. Therefore, a formula such as Coulomb's Law of Electrical Force (Fig. 6) [11] can be derived as follows:

$$|F| = k_e (|q_1 q_2| r^{-2})$$

Where F is static remote electrical force (Coulomb's force), k_e is Coulomb's constant $8.99 \times 10^9 \text{ N m}^2 \text{ C}^{-2}$, q_1 is the charge of the parent particle, q_2 is the charge of the target particle and r is the distance between two charged particles.

In case $q_1 q_2$ is positive (either both charged particles are positive or negative), the force between the two charged particles is repulsive. Otherwise, if $q_1 q_2$ is negative (one positive and the other one negative), then the force between them becomes attractive.

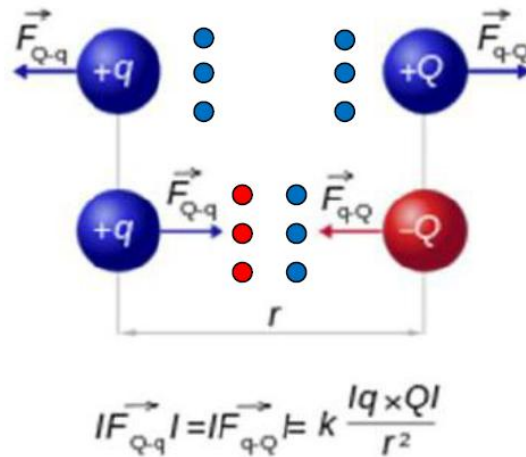


Fig. 6 Remote electrical force between two charged particles.

Electron radiation from a negative charged particle happens in a much smaller scale than that of the Graviton Radiation. Because not only the negative charges (free electrons) are mobile and repulsive to each others, but also they can be easily neutralized by the positive charges and trapped by electron holes.

K. Electrical Field and Electron Flux and Concentration of Electron Vectors

Electrical field by definition is the total remote electrical forces generated from all the charged particles in the universe applied on a unit positive charge (1 C) at a point in space. According to Electron Radiation and Contact Interaction Theory, electrical field is proportional to the summation of the static electrical fluxes emitted from all the parent charged particles (in stationary or long distance) in the universe to a unit positive charge at a point in space. Therefore,

$$\mathbf{F}_e = 1 \text{ C} \sum k_e (q/r^2) \mathbf{S}$$

Where \mathbf{F}_e is electrical field, k_e is Coulomb's constant $8.99 \times 10^9 \text{ N m}^2 \text{ C}^{-2}$, q is the Coulomb of the parent charged particle, r is the distance from the parent charged particle to the unit positive charge and \mathbf{S} is the unit vector with direction from the unit positive charge to the parent charged particle.

Similar to gravitational field, electrical field on a unit positive charge at a point in space is proportional to the total fluxes of electron vectors, as is the total concentrations of electron vectors at the point in space [126], thus electrical field is an infinitive field distributed continuously over the entire universe.

III. Quantum Field Theory

Quantum Field Theory is a theory based on the assumption that "Everything is made of fields and particles are the surges of fields". Quantum Field Theory is developed upon Quantum Mechanics [12] and Special Relativity [13] and Standard Model is derived from Quantum Field Theory and Yang Mills Theory. Despite the wrong postulation that the light speed is constant, Special Relativity is adapted to Standard Model and Quantum Field Theory mainly because of the Relativism that mass can increase with speed. Otherwise, photon and gluons with zero mass could never have sufficient energies to participate in the subatomic particle interactions. On the other hand, Uncertainty Principle is applied such that energy can be borrowed from vacuum. Otherwise, heavy W Boson could never been produced by Proton and Neutron. Furthermore, a mathematical

model of non-abelian symmetry is used to simulate quantum fields and to develop Standard Model of elementary subatomic particles.

As a result, three quantum field theories have been developed successfully, Quantum Electrodynamics [14] for electromagnetic interaction, Quantum Electroweak Theory [15] for both electromagnetic and weak interactions, and Quantum Chromodynamics [16] for strong interaction.

IV. Quantum Gravity Theory

In the past few decades, physicists have tried to develop a “Quantum Gravity Theory” to interpret gravitational force based on both Quantum Field Theory and general relativity. However, there are two problems, infinity and non-renormalization [17], involved in the derivation of Quantum Gravity Theory [18]. To avoid these problems, String Theory and Loop Quantum Gravity [18] are proposed as two possible solutions.

According to Yangton and Yington Theory, graviton has string structure composed of Wu’s Pairs which is in compliance with string theory. Also, gravitational force as gravitational quantum field is generated between two gravitons by a group of string forces induced from Force of Creation. These can be used as the backbones of Quantum Gravity Theory in compliance with both quantum field theories and general relativity [19].

V. Quantum Fields versus Gravitational Field and Electrical Field

Gravitational field and electrical field are infinitive fields. Gravitational field is the field of static remote gravitational force (Universal Gravitation) applied on a unit mass which can be calculated by Newton’s Law of Universal Gravitation. Universal Gravitation (Static Remote Gravitational Force) is a summation of gravitational forces generated by the contact interaction between two groups of gravitons, one group from target object and the other group through static graviton flux from parent object. It is different from Gravitational Force which is a single gravitational force generated by the contact interaction between two adjacent gravitons on the same object.

Similarly, electrical field is the field of static remote electrical force (Coulomb’s Force) applied on a unit positive charge which can be calculated by Coulomb’s Law. Coulomb’s Force (static remote electrical force) is a summation of electrical forces generated by the contact interaction between two groups of charged particles (electrons, positrons or protons), one group from target charged particle and the other group through the static electron flux from parent charged particle. It is different from Electrical Force which is a single electrical force generated by the contact interaction between two adjacent charged particles on the same object. Both fields generated by Gravitational Force (not Universal Gravitation) and Electrical Force (not Coulomb’s Force) are considered quantum fields in Quantum Field Theory.

VI. Four Basic Forces and String Force as Quantum Fields

According to Yangton and Yington Theory, all subatomic particles are composed of string structures built upon Wu’s Pairs (building blocks of the universe) with attractive Force of Creation (Fundamental Force of the Universe). Elementary subatomic particles are composed of Wu’s Pairs bound together by string force induced from Force of Creation. Composite subatomic particles are composed of elementary subatomic particles bound together by four basic forces generated by string force induced from Force of Creation.

Because preexistence and infinitive length of the field is irrelevant to Standard Model derived from the mathematical model of non-abelian symmetry, it is believed that four basic forces each having a short range field generated by the corresponding subatomic particle, and string force having a short range field (Higgs Field) generated by Wu’s Pairs (Higgs Bosons, the mass particle) [19], can be considered as the quantum fields in Quantum Field Theory. Consequently, these short range fields made of four basic force and string force generated by the corresponding subatomic particles can be applied with a mathematical model of non-abelian symmetry to develop Standard Model no matter of the preexistence and infinitive length of the field.

VII. Quantum Field Theory Based on Yangton and Yington Theory

Based on Yangton and Yington Theory, the short range fields made of four basic forces and string force generated by the corresponding elementary subatomic particles can be considered as quantum fields in Quantum Field Theory. In addition, despite relativism complying with special relativity and uncertainty principle according to quantum mechanics, the mass and energy transformation (such as Wu’s Pair and energy of formation) [20], and the energy and force particle formation (such as W gluons) are compatible with Yangton and Yington Theory, therefore, Yangton and Yington Theory can be considered as the backbone of Quantum Field Theory. Furthermore, because all these short range fields including the fields of four basic force and string force are generated by Force of Creation, the fundamental force of the universe, Unified Field Theory can thus be realized.

As a result, four basic forces and string force generated by Force of Creation are assumed to be the quantum fields in Quantum Field Theory and each is formed by a corresponding elementary subatomic particle. Also, Yangton and Yington Theory can be considered as the backbones of String Theory, Quantum Field Theory, Quantum Gravity Theory and Unified Field Theory.

A conceptual comparison between Quantum Field Theory and Yangton and Yington Theory can be summarized as follows:

A. Quantum Field Theory

Quantum Mechanics (QM) + Special Relativity → Quantum Field Theory (QFT).

Quantum Field Theory (QFT) + Yang-Mills Theory → Standard Model.

General Relativity + String Theory (Calabi-Yau Manifold + Quantum Field Theory (QFT)) → Quantum Gravity Theory (QGT) → Unified Field Theory (UFT).

B. Yangton & Yington Theory

Point Particles (Subatomic Particles except Graviton) + Quantum Fields (Electromagnetic Force, Weak Force and Strong Force generated by String Force induced from Force of Creation) → Quantum Field Theory.

String Particle (Graviton) + Quantum Field (Gravitational Force generated by String Force induced from Force of Creation) → Quantum Gravity Theory (QGT) → Unified Field Theory (UFT).

VIII. Conclusion

According to Quantum Field Theory, it is suggested that all subatomic particles are made of the surges of quantum fields. Many scientists believe that those quantum fields are preexisting infinitive fields in the universe such that the questions regarding the existence and propagation of the quantum fields can be avoid. In addition, based on Quantum Field Theory and Yang Mills Theory, Standard Model containing a group of subatomic particles can be derived by preexisting infinitive quantum fields with a mathematical model of non-abelian symmetry.

In contrast, according to Yangton and Yington Theory, all subatomic particles are composed of string structures built upon Wu's Pairs (building blocks of the universe) with attractive Force of Creation (Fundamental Force of the Universe). Elementary subatomic particles are composed of Wu's Pairs bound together by string force induced from Force of Creation. Composite subatomic particles are composed of elementary subatomic particles bound together by four basic forces generated by string force induced from Force of Creation.

Because preexistence and infinitive length of the field is irrelevant to Standard Model derived from the mathematical model of non-abelian symmetry, it is believed that four basic forces each having a short range field generated by the corresponding subatomic particle, and string force having a short range field (Higgs Field) generated by Wu's Pairs (Higgs Bosons, the mass particle), can be considered as the quantum fields in Quantum Field Theory. Consequently, these short range fields made of four basic force and string force generated by the corresponding subatomic particles can be applied with a mathematical model of non-abelian symmetry to develop Standard Model no matter of the preexistence and infinitive length of the field.

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