Suggestion of New Standard Model

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Abstract All things are composed of six fundamental particles: electron neutrino 0.153 eV/c2, muon neutrino 170 keV/c2, tau neutrino 15.5 M eV/c2, graviton 2.49E-10 eV/c2, photon 0.160 eV/c2, and gluon 115 eV/c2. All the other particles are the combined particles. From this, a new standard model is drawn. The language of physics is drawing, not mathematics. Various unsolved problems in physics are solved when the shape of every particle is accurately drawn.

1. Introduction

The purpose of this study is to propose a new standard model of particle physics.

2. New Standard Model

2.1 Current Standard Model

The standard model of particle physics is shown in Fig. 1. It consists of a total of 17 elementary particles and graviton.

2.2 New Standard Model

A new standard model is proposed in Fig. 2.

2.3 Six fundamental particles

In Fig. 2, all things are composed of six fundamental particles: electron neutrino ν_e^n, muon neutrino ν_μ^n, tau neutrino ν_τ^n, graviton ρ_e^n, photon ρ_μ^n, and gluon ρ_τ^n.

2.4 Combined particles

All the other particles are the combined particles.

2.5 Particle and Antiparticle

Particle is red n and anti-particle is blue s. In fermion, the mass of antiparticle s is 2π times greater than that of particle n. In boson, the mass of ns is $(1+2\pi)^2\cdot\sqrt{n}$. That is, if the mass of particle n is known, the mass of antiparticle s is automatically determined.

2.6 Normal and Oscillating

Lowercase n and s means normal mass, and uppercase N and S means oscillating mass. The normal masses of three generation neutrinos are presented in Fig. 3. The mass of electron neutrino is calculated as 0.153 eV. Here, the 187.5 keV and 13.60 MeV in Fig. 4 are also electron neutrino masses. Neutrinos and gravinos oscillate the three kinds of mass. The logarithmic average mass of the three kinds of mass is the oscillating mass of the particle.

The shapes of three generation normal neutrinos and gravinos are shown in Fig. 5.1(a).

2.7 Weak, Electromagnetic, Strong forces

The shapes of forces in Fig. 2 are shown in Fig. 5(b). Force is the combination particle of one normal neutrino and one oscillating gravino. They are particle forces. Weak force causes gravity. Here, weak force acts on quantum space, but gravitational force acts toward 4D empty space.

2.8 Three generation dark forces

Three generation dark forces are affecting above particle forces. The result is the four fundamental physical forces. The first-generation dark force is the dark energy of physics.

2.9 Electron, Muon, Tau

The shapes of electron, muon, and tau in Fig. 2 are shown in Fig. 3(d). They are the combination particle of oscillating neutrinos and oscillating gravinos.

2.10 Fermion and Boson

Fermion particles located on the left side of Fig. 3 make up our universe, and boson particles located on the right side are hidden in quarks. When the masses of fermion particles are known, the masses of boson particles are calculated with the super-gauge symmetry of the elliptic equation.

2.11 W, Z, H Bosons

The shapes of W boson, Z boson, and H boson are equal

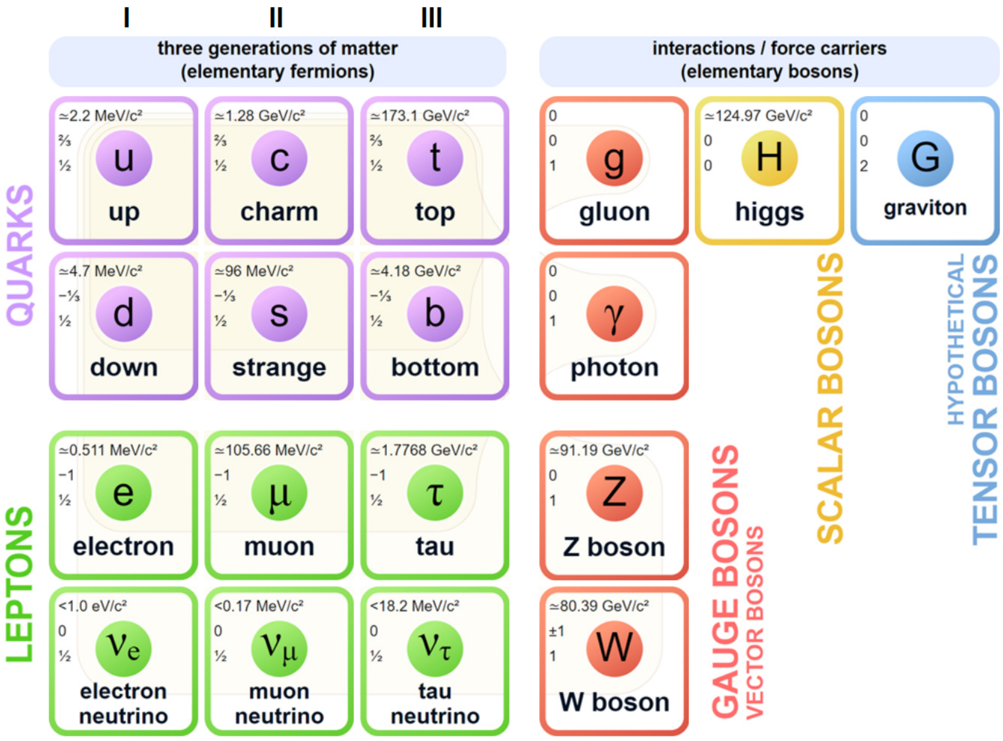

Fig. 1 Current Standard Model

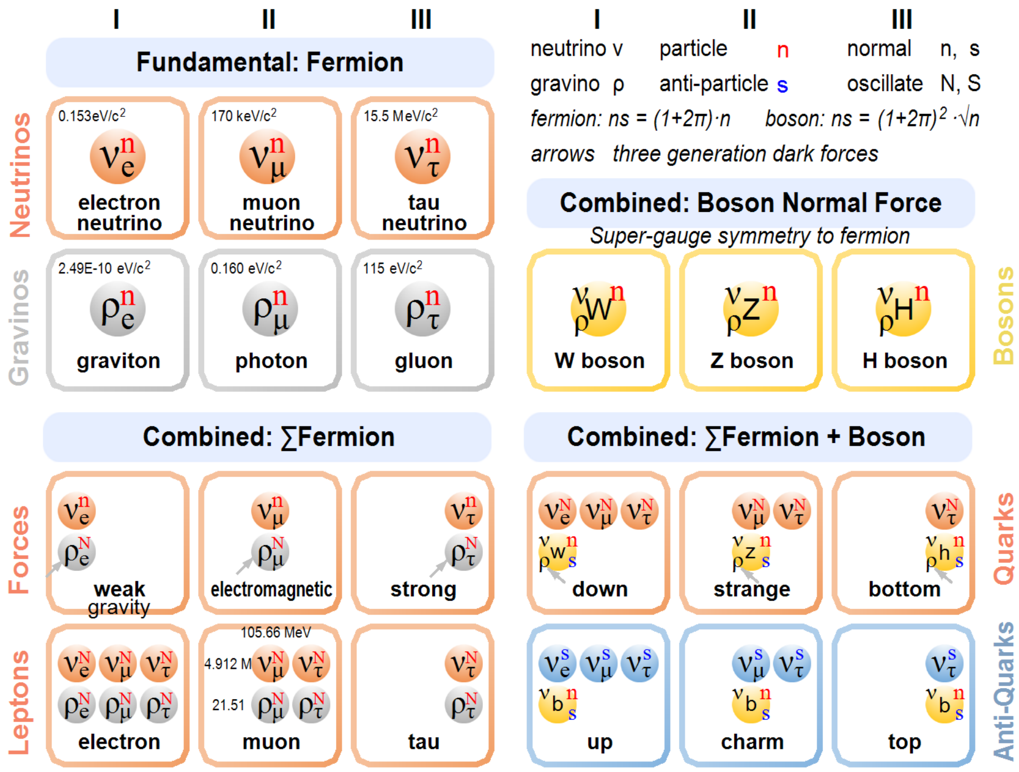

Fig. 2 New Standard Model

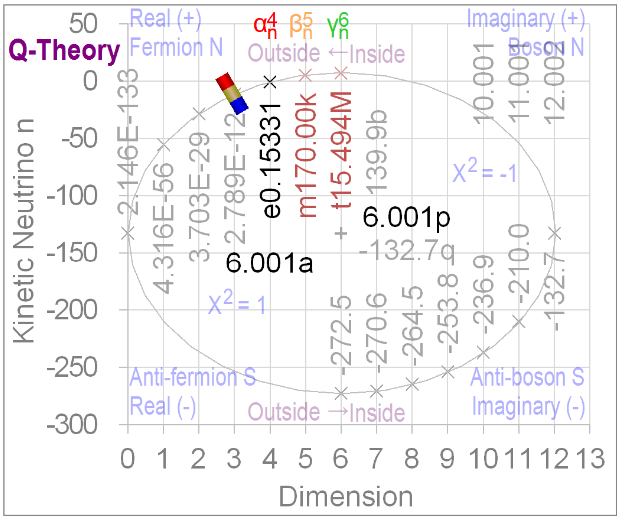

Fig. 3 Mass of normal neutrinos

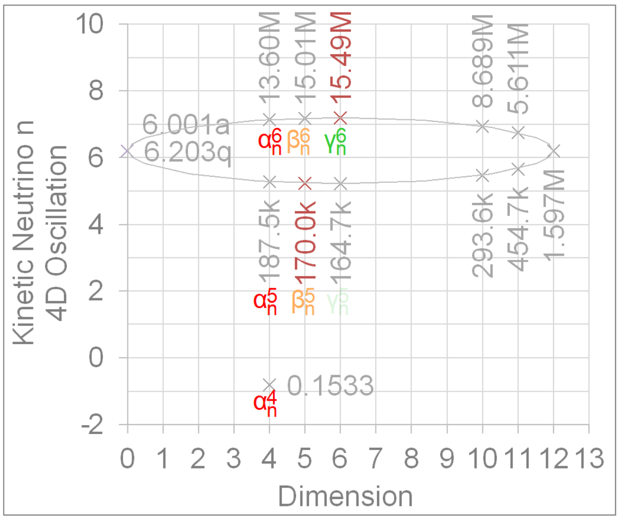

Fig. 4 Mass of oscillating neutrinos

to Fig. 5(a). Here, the masses of the normal bosons are calculated from super-gauge symmetry of oscillating fermions.

2.12 Down, Strange, Bottom

In Fig. 6, the shell of down, strange, and bottom quarks is the oscillating neutrinos, and the inside is the particle and anti-particle normal neutrino and gravino bosons. The boson particle in quark is lowercase w, z, or h with very little mass. When a quark decays, it transforms into uppercase W, Z, or H with very large mass. The color of down, strange, and bottom is red. Therefore, they are matter.

2.13 Up, Charm, Top

In Fig. 6, the shell of up, charm, and top quarks is the normal anti-neutrinos, and the inside is the particle and antiparticle normal neutrino bosons. The boson mass of lowercase b is located in quark. When a quark decays, it transforms into uppercase B with very large mass. The color of up, charm, top is blue. Therefore, they are anti-matter.

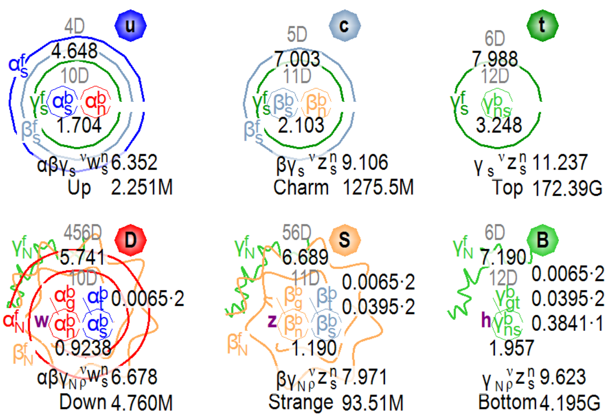

Fig. 6 Shape of quarks

3. New Interpretation

3.1 Too many input constants

Six variables are input constants. That is, if six exact values are given, everything is calculated accurately as shown in Fig. 12.1 of Ref. [1].

3.2 Why are particles three generations?

As shown in Fig. 7, all particles are classified into three generations because three generation quantum spaces of a, b, and c dimensions exist.

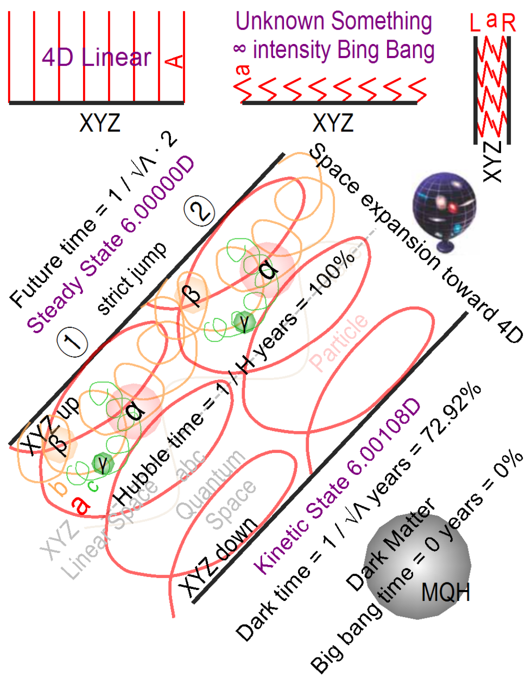

Fig. 7 Shape of quantum space

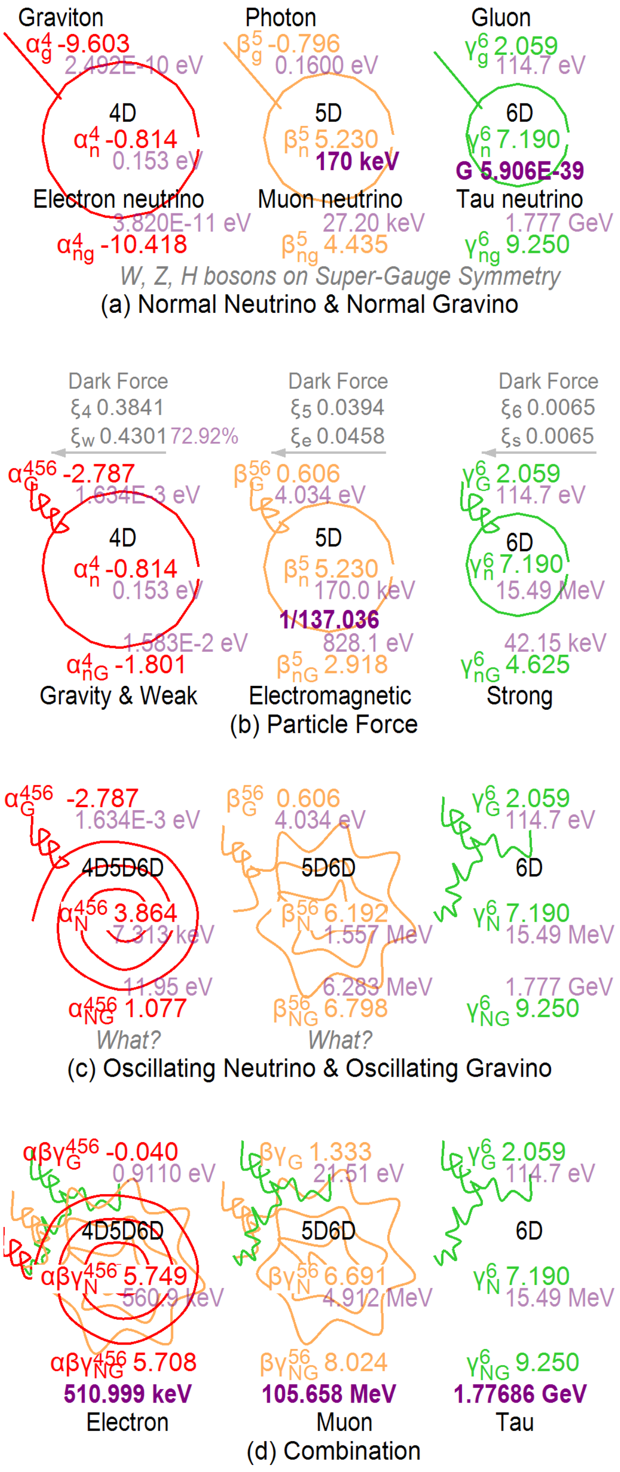

Fig. 5 Neutrinos and Leptons

3.3 What is Gravity?

Gravity is easily calculated from Fig. 8.

3.4 What is the origin of mass?

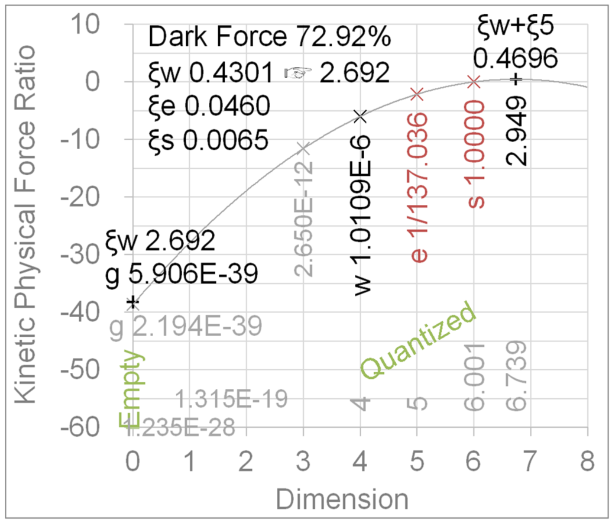

Fig. 8 Unification of four fundamental forces

As shown in Fig. 7, the compressive strength of three generation quantum space imparts a mass to quantum particle. That is, quantum particles do not have proper mass.

In Fig. 9, the combination of 30 kg and 70 kg in quantum space is 2100 kg from multiplication. In muon of Fig. 5(d), the value of 21.51 eV x 4.912 MeV is the muon mass of 105.7 MeV. This calculation is elementary school arithmetic. There is no quantum mechanics theory that can calculate the elementary school arithmetic.

3.5 Is the mass of neutrino 0 eV?

The mass of electron neutrino is 0.153 eV/c^2, the mass of muon neutrino is 170 keV/c^2, and the mass of tau neutrino is 15.5 MeV/c^2.

3.6 Is the mass of gravino 0 eV?

The mass of graviton is 2.49E-10 eV/c^2, the mass of photon is 0.160 eV/c^2, and the mass of gluon is 115 eV/c^2.

3.7 What is Oscillation?

Three generation neutrinos and three generation gravinos constantly jump through three generation quantum space of Fig. 7. Due to this, their masses always change to three generation masses. This is oscillation phenomenon.

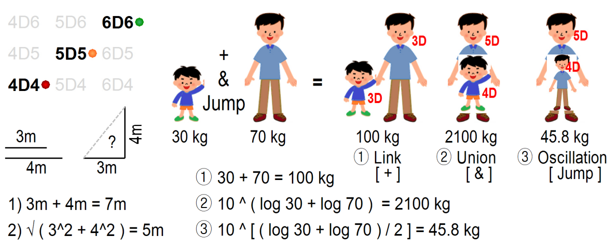

Fig. 9 Calculation of quantum particle mass

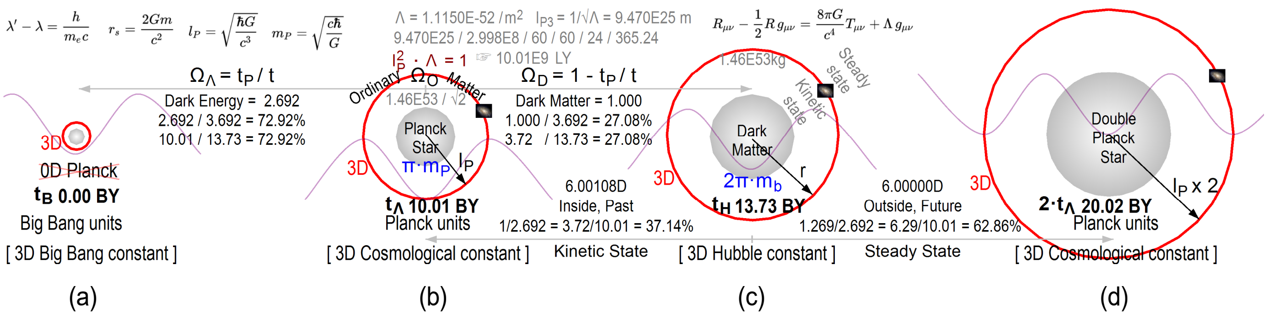

Fig. 10 Dark energy and dark matter

3.8 Does antineutrino also oscillate?

In Fig. 6, the red neutrino has oscillation, and the blue anti-neutrino has no oscillation.

3.9 Why is everything a particle?

The origin of particle is an extremely compressed universal brane. Part of brane breaks and turns into particle. Therefore, a particle is a very long line. When the line is placed in quantum space, it turns into a particle that has heavy mass.

3.10 Is particle correct? Is wave correct?

From the quantum space abc of Fig. 7, when the particle appears on our space XYZ, it turns into a wave line that has almost close 0 eV. The mass of photon located in quantum space is 0.160 eV. However, when it appears on our space, it turns into light with almost close 0 eV.

3.11 Do hypothetical particles exist?

Various particles occur during the collapsing of combination particle. However, every particle is a combination of six fundamental particles. Combining the various values in Ref. [1], the masses of various particles measured in physics will be calculated. There are no hypothetical particles.

3.12 Is the super-symmetry correct?

In Fig. 3, the left side of elliptic equation is the real fermion universe, and the right side is the imaginary boson universe. The upper part is a positive universe in which light spreads, and the lower part is a negative universe in which light converges. They have perfect super-gauge symmetry.

3.13 Will proton decay?

In natural state, proton does not decay. The three generation quantum spaces of Fig. 7 dominate everything.

3.14 Where is antimatter?

In Fig. 6, down, strange, and bottom are matter, and up, charm, and top are anti-matter. That is, they exist exactly in equal numbers in the universe.

3.15 What is consciousness?

Four fundamental forces are red particles (matter). The red forces cause chemical reactions in matter. The blue forces must also exist in universe with equal numbers. Where are they and what chemical reactions do?

3.16 Where is Dark Matter

In Fig. 10, the object inside of the universe is dark matter or Planck star. The object is composed of antiparticles. That is, dark matter does not exist in our universe.

3.17 Is Bing Bang Theory correct?

In Fig. 10, (a) is Big Bang time, (b) is cosmological constant time, (c) is Hubble time, and (d) is double cosmological constant time. The standard for the interpretation of the universe is not Planck time 5.4E-44 seconds, but the cosmological constant time of 10.01 billion years.

3.18 Why is it inconsistent with ΛCDM model?

The value of 10.01 / 13.73 is the dark energy ratio of 72.9%, and the value of 3.72 / 13.73 is the dark matter ratio of 27.1%. Ordinary matter has nothing to do with the expansion of the universe. The universe is expanding at a constant velocity. If the ratio of ordinary matter is included in the calculation, the result is inconsistent with the constant velocity expansion.

4. Conclusions

The language of physics is drawing, not mathematical formula. After the drawing for phenomenon is shown correctly, a mathematical formula suitable for the drawing must be derived. The representative example is standard model.

The combination of quantum masses is multiplication, not addition. There is no quantum mechanics theory that can calculate the elementary school arithmetic.

References

[1] D. Kim, 2021, Theory of Everything and Logarithmic Elliptic Equation, https://vixra.org/pdf/2110.0023v1.pdf