Suggestion of New Standard Model

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Abstract All things are composed of six fundamental particles: electron neutrino 0.1524 eV, muon neutrino 169.06 keV, tau neutrino 15.408 MeV, graviton 2.506E-10 eV, photon 0.1609 eV, and gluon 115.32 eV. All the other particles are the combined particles. They operate as logarithmic elliptic equations, which satisfy super symmetry, gauge symmetry, renormalization, spontaneous symmetry breaking, hierarchical problem, and fine-tuning universe. 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. The core is two. 1) The compressive strength of three-dimensional quantum space formed as log-elliptic equation gives the particle mass. 2) The brane of quantum space is composed of dipoles of a total of 6 components: three generation neutrinos, graviton, photon, and gluon. Based on this, all problems in physics will be solved.

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 Kinetic, Steady, Combined State

All particles have a kinetic state rest mass and a steady state rest mass. The change of the universe operates as a combined state of above two.

2.6 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 calculated.

2.7 Normal and Oscillation

Lowercase n and s means normal mass, and uppercase N and S means oscillating mass. As one example, the normal masses of three generation neutrinos are presented in Fig. 4(a). The mass of electron, muon, and tau neutrinos are calculated as 0.15244 eV, 169.06 keV, and 15.408 MeV. Here, as one example, the 186.5 keV and 13.53 MeV in Fig. 4(b) are also electron neutrino mass. Such as above, 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. As above example, the oscillating log-mass of electron neutrino is calculated as 3.8617 = (log 0.1524 eV + log 186.5 keV + log 13.53 MeV) / 3.

The shapes of three generation normal neutrinos and gravinos are shown in Fig. 3.1(a).

2.8 Three generation dark forces

Dark energy is the wrong word. Dark time is the correct word, and it causes the three generation dark forces. The red arrow is the 4D dark force, the orange arrow is the 5D dark force, and the green arrow is the 6D dark force.

2.9 Weak, Electromagnetic, Strong forces

The shapes of forces in Fig. 2 are shown in Fig. 3(b). Force is the combination particle of one normal neutrino and one oscillating gravino. They are always kinetic state particle

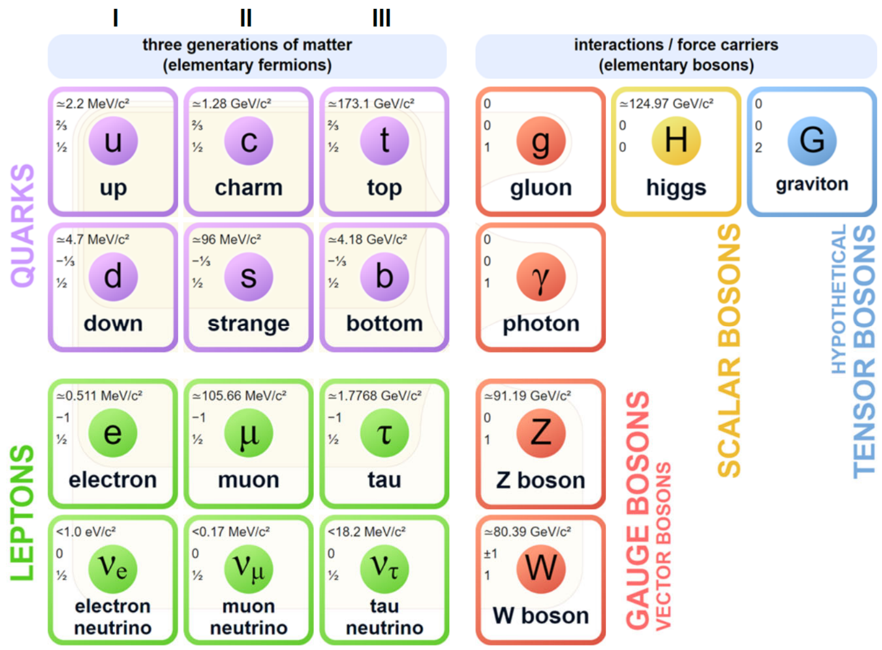


Fig. 1 Current Standard Model

Fig. 2 New Standard Model

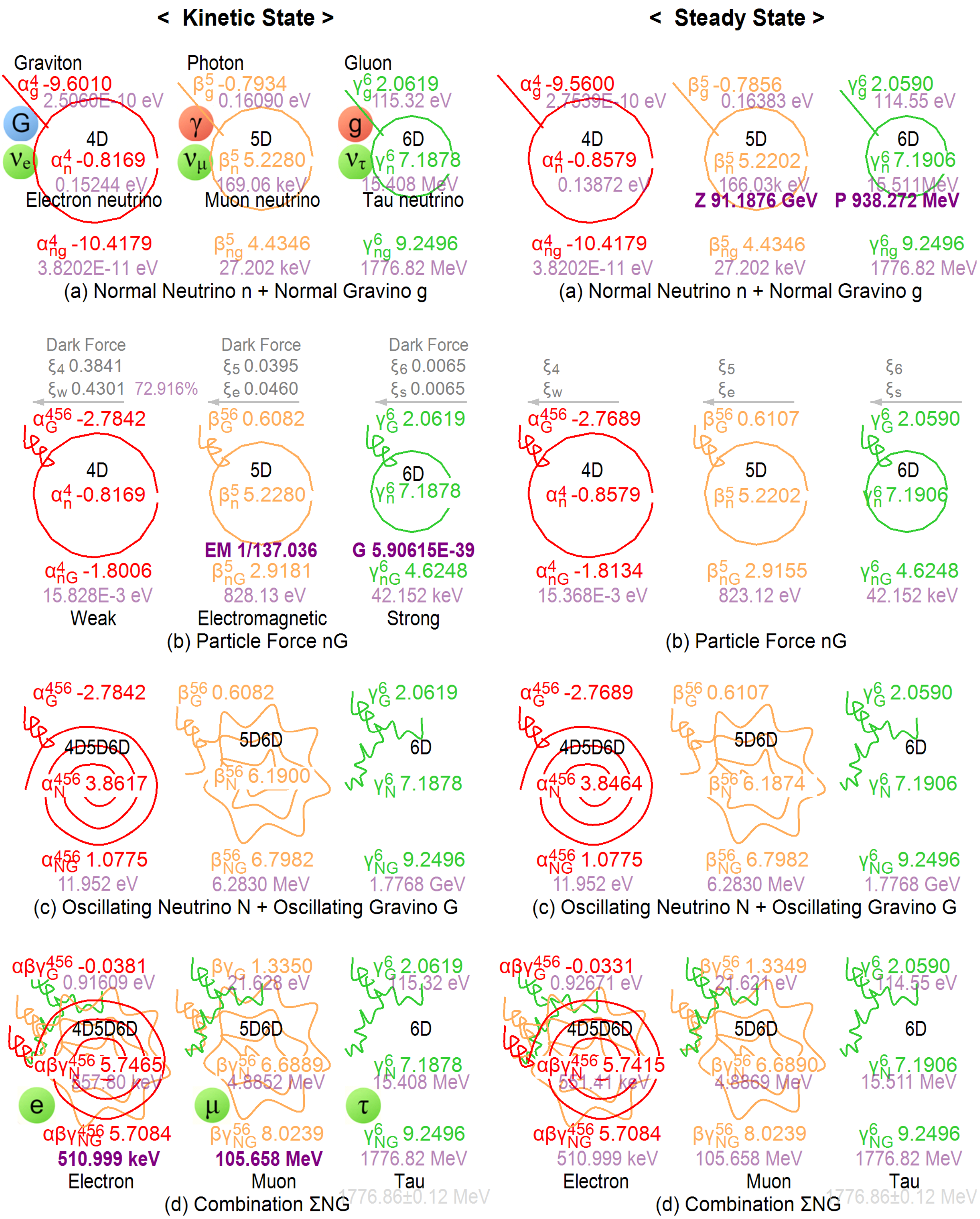
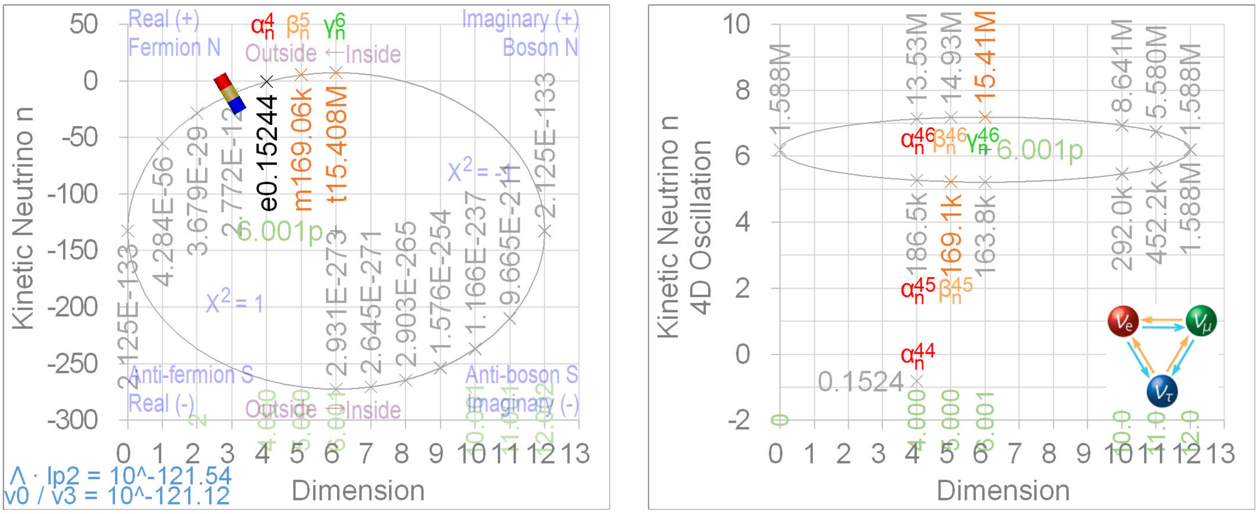


Fig. 3 Particle shape and log-mass



(a) Mass of normal neutrinos

(b) Mass of oscillating neutrinos

Fig. 4 Mass of neutrinos

forces. Weak force causes gravity. Here, weak force acts on quantum space, but gravitational force acts toward 4D empty space. 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.

2.10 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.

2.11 Fermion and Boson

Fermion particles located on the left side of Fig. 4 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. The fermion branes constitute dimensional multiverse with a size close to infinity, and the boson branes are a near-zero universe hidden in quarks. After 10^111 years, these reverse.

2.12 W, Z, H Bosons

Bosons are hidden in quarks. When a quark explodes, a boson pops out into our world. The shapes of W boson, Z

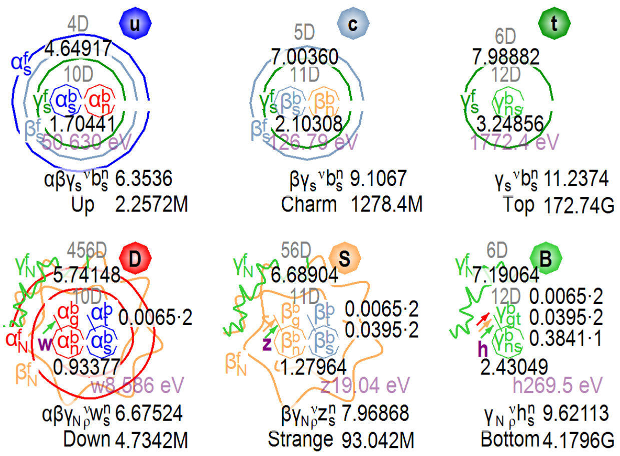


Fig. 5 Shape of quarks

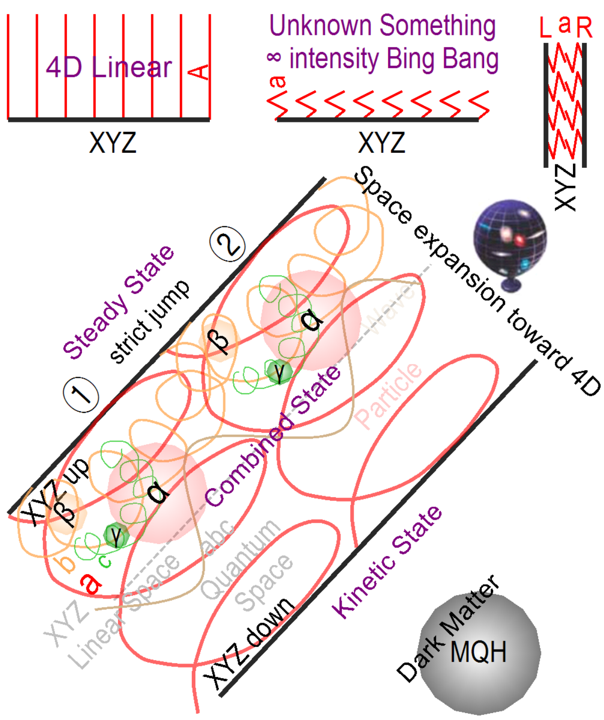
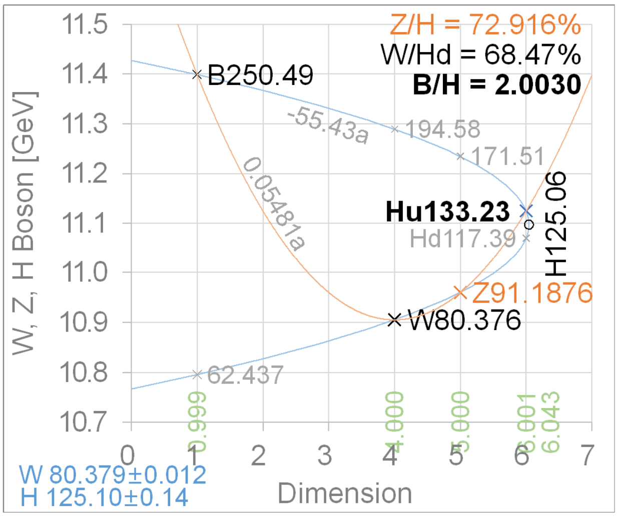


Fig. 6 Shape of quantum space of universe



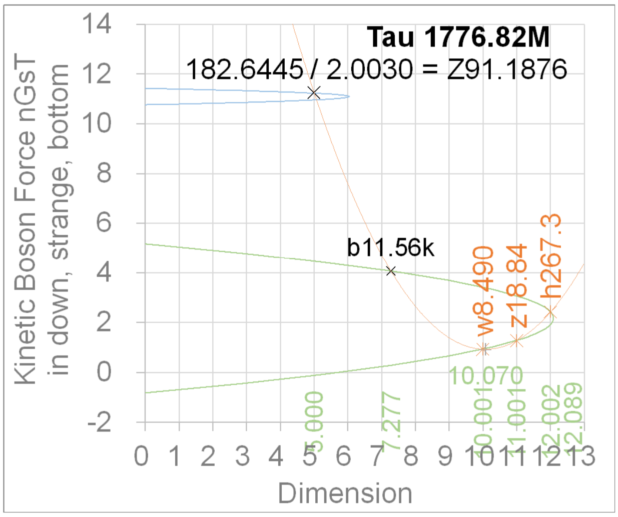


Fig. 7 Calculation of W and H boson

Fig. 8 Collapse of quarks

boson, and H boson are equal to Fig. 3(a). Here, the masses of the normal bosons are calculated from super-gauge symmetry of oscillating fermions. When Z boson is 91.1876 GeV, from Fig. 7, W and H bosons are calculated as 80.376 GeV and 125.06 GeV.

2.13 Down, Strange, Bottom

In Fig. 5, the shell of down, strange, and bottom quarks is the oscillating neutrinos of steady state, and the inside is the particle and anti-particle normal neutrino and gravino bosons of combined state. The boson particle in quark is lowercase w, z, or h with very little mass such as Fig. 8. When a quark decays, the w, z, h boson of the combined state change to kinetic stats of Fig. 8, and they transform into uppercase W, Z, or H with very large mass. The color of down, strange, and bottom is red. Therefore, they are matter.

2.14 Up, Charm, Top

In Fig. 5, the shell of up, charm, and top quarks is the normal anti-neutrinos of steady state, and the inside is the particle and antiparticle normal neutrino bosons of steady state. The boson mass of lowercase b is located in quark. When a quark decays, it transforms into uppercase B with large mass. The color of up, charm, top is blue. Therefore, they are anti-matter.

3. New Interpretation

3.1 Too many input constants

As shown in Fig. 2, a total of 10 variables are needed to solve the problem. Here, 4 variables are resolved internally. Therefore, the total independent variables are six. If six exact values are given, everything is calculated accurately as shown in Fig. 13.1 of Ref. [1]. The dark force (dark energy) and the current time are calculated from the electromagnetic force coupling constant. In Fig. 3(a), the n + g mass in kinetic state and the n + g mass in steady state are the same. From this, two steady state masses of g are calculated internally.

In Ref. [1], the following calculations are not explained. In the W Z H mass of Fig. 7, the value of B/H is 2.0030 and the value of Hu is 133.23 GeV. Fig. 9 shows the mass obtained by combining the mass of neutrino as 37.144% of kinetic

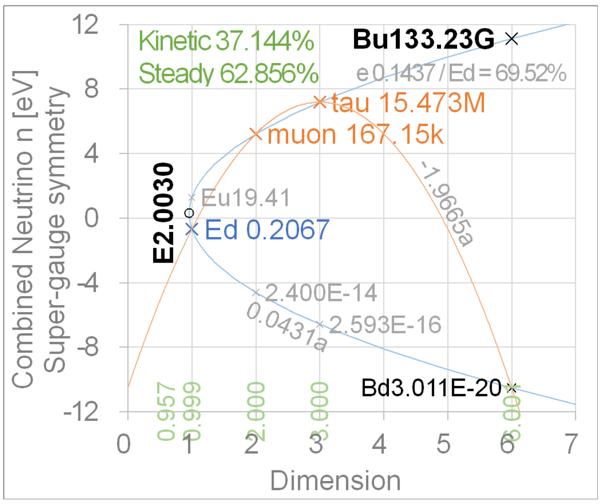


Fig. 9 Supergauge symmetry of combined Neutrinos

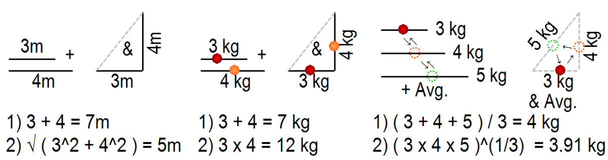
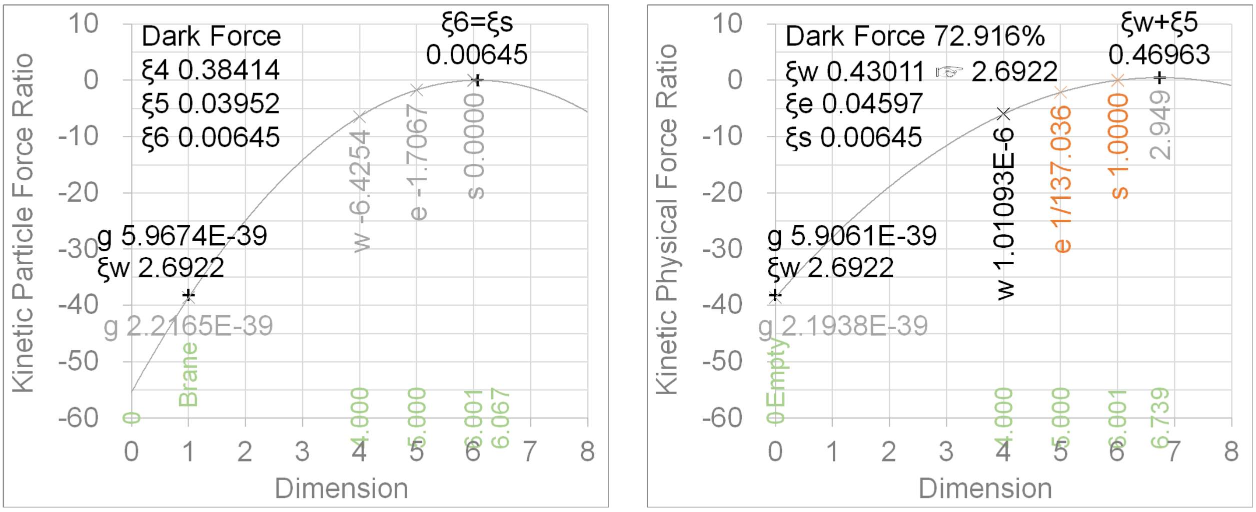


Fig. 10 Calculation of quantum particle mass



(a) Particle force mass when strong is log 1

(b) Physical Forces Affected by Dark Forces

Fig. 11 Unification of four fundamental forces

state and 62.856% of steady state (See Fig. 2 and Fig. 13). Two internal variables can be calculated for the E value is 2.0030 and the Bu value is 133.23 GeV.

3.2 Why are particles three generations?

As shown in Fig. 6, all particles are classified into three generations because three generation quantum spaces of a, b, and c dimensions exist. The current exact quantum dimensions are 4D, 5D and 6.00107D.

3.3 What is Gravity?

Gravity is easily calculated from Fig. 11. (a) is the relative mass of the force particles, and (b) is the physical force affected by the dark force. Strong force is on 6D, electromagnetic force is on 5D, weak force is on 4D, and gravitational force is on 0D. The 0D is empty, not quantum space. The 3D position on Fig. 11 is the space that we usually perceive.

3.4 What is the origin of mass?

As shown in Fig. 6, 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. 10, the combination of 3 kg and 4 kg in quantum space is not 7 kg of addition but 12 kg of multiplication. In muon of Fig 2 or Fig. 3(d), the value of 21.628 eV x 4.8852 MeV is the muon mass of 105.658 MeV. There is a photon in the shape of muon. The value of 21.628 / 4.8852E6 is 4.425E-6. This is the cause of muon g-2 problem.

3.5 Is the mass of neutrino 0 eV?

Neutrino masses are shown in Fig. 2.

3.6 Is the mass of gravino 0 eV?

Graviton, photon, and gluon masses are shown in Fig. 2.

3.7 What is Oscillation?

Three generation neutrinos and three generation gravinos constantly jump through three generation quantum space of Fig. 6. Due to this, their masses always change to three generation masses. This is oscillation phenomenon.

3.8 Does antineutrino also oscillate?

In Fig. 5, the red neutrino has oscillation, and the blue antineutrino has no oscillation.

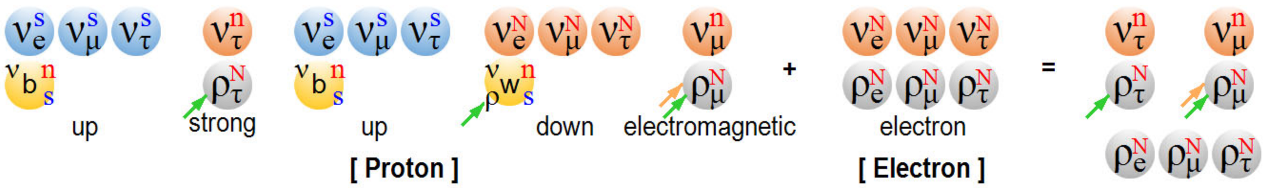


Fig. 12 The number of particles and antiparticles in an atom

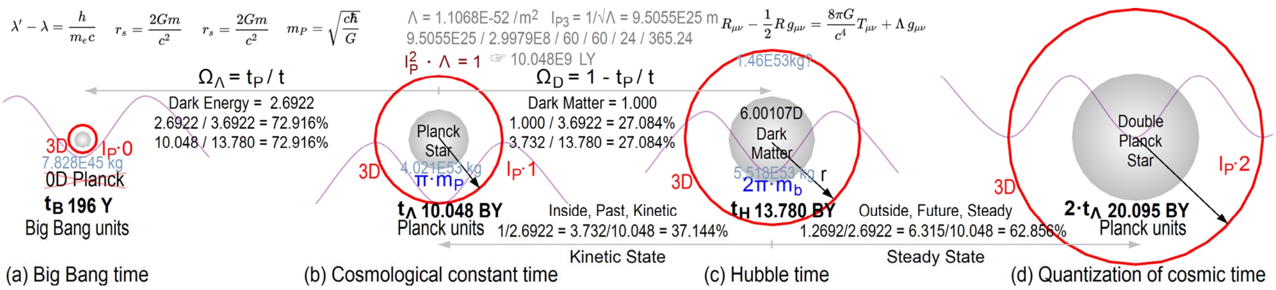


Fig. 13 Dark energy and dark matter

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. 6, 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 0.1609 eV. However, when it appears on our space, it turns into light with almost close 0 eV. See Fig. 3. Not particle, not wave, open particle is the correct answer.

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. 4, 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. 6 dominate everything.

3.14 Where is antimatter?

In Fig. 5, 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. Fig. 12 is an atom that is the sum of proton and electron. The red particles and blue antiparticles are equal numbers, so only the red force particles remain. The force particles cause various chemical reactions.

3.15 What is consciousness?

In Fig. 12, there is only the red forces. The red and blue forces must be equal numbers. Where is the blue force?

3.16 Where is Dark Matter

In Fig. 13, 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?

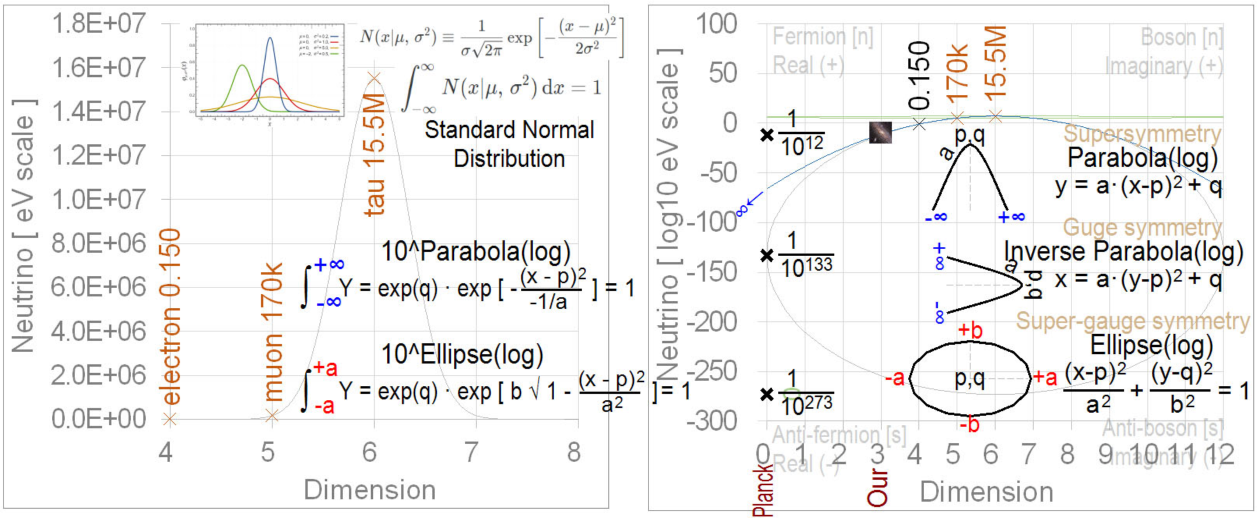
In Fig. 13, (a) is Big Bang time, (b) is cosmological constant time, (c) is Hubble time, and (d) is double cosmological constant time. The standard for the interpretation of the universe is not Planck time 5.4E-44 seconds, but the cosmological constant time of 10.048 billion years. The current big bang theory adopts the value on 0D in Fig.3. Our universe is the value on 3D not 0D.

3.18 Why is it inconsistent with ΛCDM model?

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. In the Plank 2018 data, Λ is 1.1056E-52 /m2, and the current time is 13.787 BY. 1 / c$\sqrt{\Lambda}$ = 1 / (2.9979E8 · 60 · 60 · 24 · 365.24 · $\sqrt{\Lambda}$) = 10.053 BY. The value of 10.053 / 13.787 is 72.915%, and this is dark energy ratio. It is not dark energy, but dark time. The value of log 10.053 / (13.787 – 10.053) is 2.6922. Fig. 11(a) is calculated from Fig. 3(b). Electromagnetic force is 10^-1.7067 / 2.6922 = 1/137.036, and weak force is 10^-6.4254 x 2.6922 = 1.01093E6. When plotting the log parabola in Fig. 11, the value of 0D is 2.1938E-39, and when multiplied by 2.6922, the gravity is calculated as 5.9061E-39. The 72.916% or 2.6922 is equally affecting electromagnetic force, weak force, and gravitational force.

4. Logarithmic Elliptic Equation

4.1 Normal distribution equation



(a) Mass scale of neutrinos (b) Log mass scale of neutrinos

Fig. 14 Characteristics of log-elliptic equation

Normal distribution diagram and equation are shown in the upper of Fig. 14(a).

4.2 Log-parabolic equation

As shown in the left middle of Fig. 14(a), the value of log-parabolic equation is the normal distribution equation.

4.3 Value scale and Log scale

Fig. 14(a) is value scale, and (b) is log scale. That is, they are the same.

4.4 Log-elliptic equation

Log-elliptic equation is drawn in Fig. 14(b).

4.5 Dirac delta function

If the log-ellipse of (b) is again plotted as values, it is (a). That is, log-ellipse satisfies Dirac delta function.

4.6 Super symmetry

In (b), the left and right sides of elliptic equation are symmetrical. The left side is fermion real number universe, and the right side is boson imaginary number universe.

4.7 Gauge symmetry

In (b), the upper and lower sides of elliptic equation are symmetrical. The upper is particle positive universe, and the lower is anti-particle negative universe.

4.8 Renormalization

In (b), the left side of parabola towards -∞, and the right side towards +∞. Eventually, the extreme value become exactly 0 eV. The left end of the ellipse is -a (0D) and the right end is +a (12D).

4.9 Spontaneous symmetry breaking

In (b), elliptic equation has vertices at -a and q-b.

4.10 Hierarchical problem

In (b), The minimum value of the ellipse is 1/E273. This is an extremely small value, but not 0 eV.

4.11 Fine-tuning universe

In (b), the lower part of parabola and the left side of inverse parabola cannot be calculated. However, ellipse can calculate all area.

4.12 Anthropic principle

In (b), our universe is located on 3D. Therefore, it can be understood that 6D multiverses exist. The 6D12D universes are the symmetry of 0D6D universes.

5. Result of calculation

5.1 Mass of electron neutrino

In (b), as an example, by substituting muon neutrino 170 keV on 5D, tau neutrino 15.5 MeV on 6D, 6D midpoint, and 0D vertex, electron neutrino on 4D is calculated as 0.150 eV.

5.2 Cosmological constant problem

In (b), the Planck 0D value is 1/E273 eV, the Our 3D value

Table 1 Calculation result by applying log-elliptic equation

Term	Electron	Muon	Tau	Graviton	Photon	Gluon
Physics	0.12(0.15) eV	<170 keV	<15.5 MeV	0 eV	0 eV	0 eV
Results	0.15244(0.120)	169.06	15.408	2.506E-10	0.16090	115.32
Term	Tau	Weak Force	Proton Radius	Quark Radius	Dark Energy	Cos.C.Problem
Physics	**1776.86±0.12**	About 1E-06	**0.8751±0.0061**	< 0.43 am	68.89%,72.8%	E-121.539
Results	1776.82 MeV	1.0109E-6	0.8751 fm	0.4401,0.425	72.92%	E-121.533
Term	Cosmo. C.	Hubble C.	Current Time	W	H	Up
Physics	1.1056E-52	67.66,≈74	13.787 BY	**80.379±0.012**	**125.10±0.14**	$2.2^{+0.5}_{-0.4}$
Results	1.1068E-52	70.961	13.780 BY	80.376 GeV	125.06 GeV	2.2572 MeV
Term	Charm	Top	Down	Strange	Bottom	Kaon
Physics	1275^{+25}_{-35}	**172.76±0.3**	$4.7^{+0.5}_{-0.3}$	95^{+9}_{-3}	$4.18^{+0.04}_{-0.03}$	**493.67,497.65**
Results	1278.4 MeV	172.74 GeV	4.734 MeV	93.04 MeV	4.180 GeV	495.93 MeV

is 1/E12 eV, and the ratio of the two is 1/E121.

5.3 Neutrino oscillation phenomenon

In (b), the ellipse is calculated as a very large gray ellipse such as Fig. 4(a) and a very small green ellipse such as Fig. 4(b). The large ellipse is the normal mass, and the small ellipse is the oscillating mass.

5.4 Result of calculation

The new results calculated from previous study [1] are presented in Table 1. They will be accurate to within 0.01%.

6. 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 drawing 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.

The core is two. 1) The compressive strength of three-dimensional quantum space formed as log-elliptic equation gives the particle mass. 2) The brane of quantum space is composed of dipoles of a total of 6 components: three generation neutrinos, graviton, photon, and gluon. Based on this, all problems in physics will be solved.

References

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