Calculation of Space Dimension by Q-theory

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Abstract Electron, muon, and tau are the combined particles composed of three generation neutrinos and three generation gravinos. The neutrinos make the shape of particles, and the gravinos make the force of particles. Muon is the particle that the outer shell of electron is peeled off, and tau is the particle that the outer shell of muon is peeled off. In previous study, logarithmic elliptic equation was suggested, and it was called as Q-theory. Applying this to electron, muon, and tau, the dimension of space is calculated as 6.00108.

1. Introduction

In previous studies, the mass of H boson was calculated very easily from the logarithmic parabolic equation relationship of W boson and Z boson(1), and the characteristics of logarithmic elliptic equation and the principle of cosmological change were described(2).

The purpose of this study is to calculate the dimension of space from electron, muon, and tau.

2. Shape of electron, muon, tau

2.1 Kinetic state, Steady state

In Fig. 1, our universe is divided into kinetic state on the left and steady state on the right. The kinetic state is applied when analyzing the expansion of universe, and the steady state is applied when analyzing the mass of particles.

2.2 Neutrino, Gravino

Three generation of neutrinos (electron, muon, and tau) make the shapes of particles, and three generation of gravinos (graviton, photon, and gluon) make the forces of particles. Here, gravino is a new word created by author.

2.3 Shape of neutrino

In Fig. 1(a), α, β, and γ mean each 1st, 2nd, and 3rd generation particle, subscript n means neutrino, and superscript 4, 5, and 6 mean each 4th, 5th, and 6th dimension. Small letter means standard mass, and capital letter means oscillating mass. Therefore, α_n^4, β_n^5, and γ_n^6 are standard neutrinos for electron on 4D, muon on 5D, and tau on 6D.

The neutrinos are open particles as shown in (a). Due to this, when they encounter a certain special circumstance, they spread as wave lines.

2.4 Shape of gravino

In Fig. 1(a), subscript g means gravino. Therefore, α_g^4, β_g^5, and γ_g^6 are standard gravinos for graviton on 4D, photon on 5D, and gluon on 6D.

Gravino spreads radially around the neutrino. α_g^4 spreads inward, β_g^5 spreads outward, and γ_g^6 spreads toward their vertical direction. Here, in the expression of the picture, the radial lines were expressed as a single line.

2.5 Shape of four major forces

The shapes of four major forces are shown in Fig. 1(b). Weak force is the force of graviton oscillating in 4D, 5D, and 6D, the electromagnetic force is the force of photon oscillating in 5D and 6D, and the strong force is the force of gluon oscillating in only 6D. Weak, electromagnetic, and strong forces are the force acting on quantum space, and gravity is the force acting toward the empty space of 4D. The four major forces will be described in detail in future study.

2.6 Sphere universe

In previous study(1), our universe is a sphere, and it is suggested that the Planck length of our universe is 9.5104E25 m from the measured cosmological constant. Applying the numerical values in the kinetic state of Fig. 1, the value is calculated as 5.896E25 m. The radius of hydrogen is about 5.29E-11 m, and the ratio of the two values is 8.98E-37. The magnitude of electromagnetic force is 1/137, the magnitude of gravity is 5.90E-39, and the ratio of the two values is 8.09E-37. The 8.98E-37 and 8.09E-37 are very similar. Here, hydrogen is in steady state, and Planck length and forces are in kinetic state. The correct answer is when the above two states match each other.

From above, it can be seen that hydrogen and universe

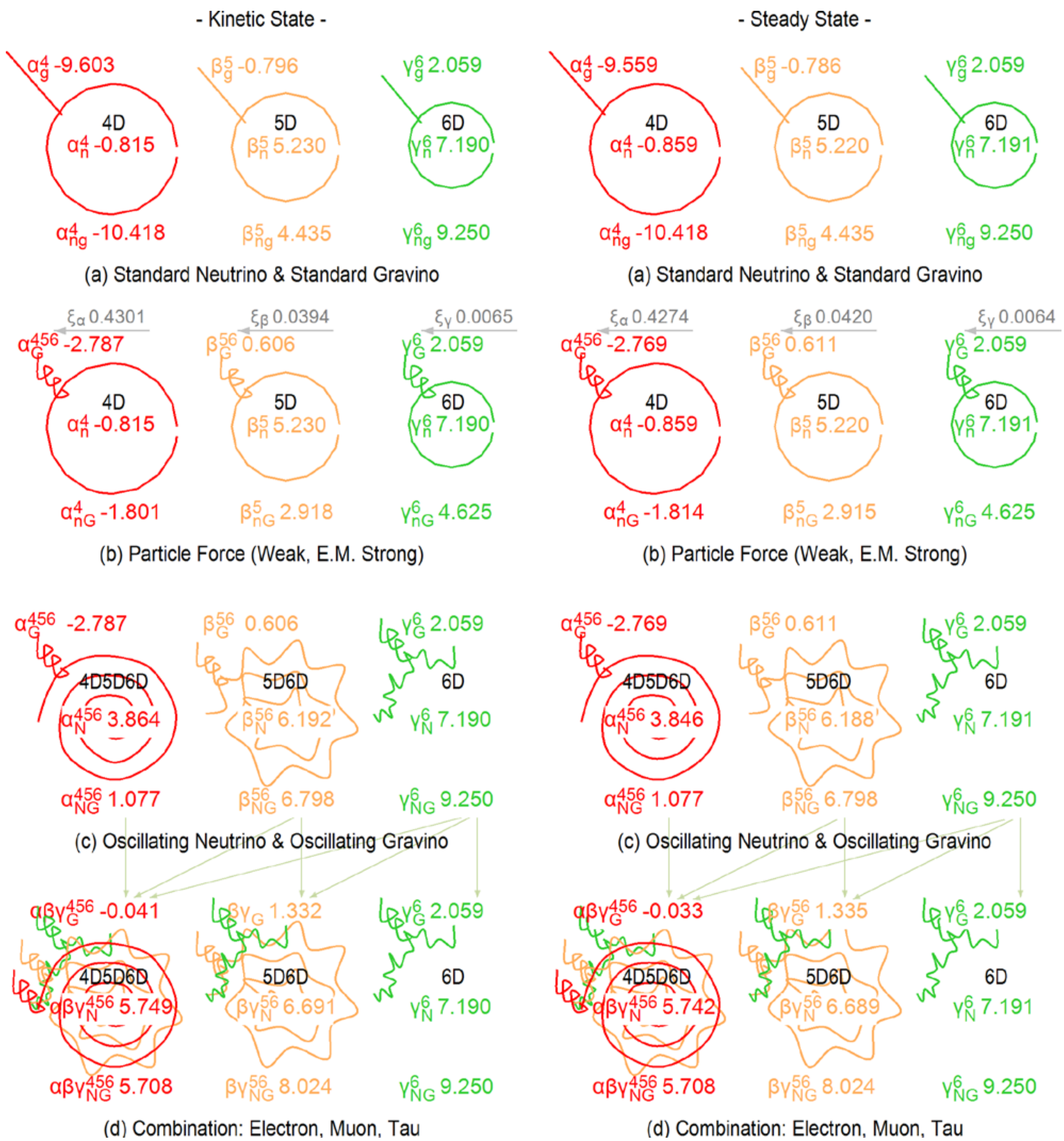

Fig. 1 The shapes of various particles

are the same characteristics. Hydrogen is a spherical quantum particle composed of proton and shell electron. Such as this, our universe is also a spherical quantum particle composed of a certain nucleus and shell space. Author calls the nucleus as a mommy quantum hole[(2)]. If there is no nucleus of universe, the universe is extremely unstable. If there is a nucleus of universe, the universe is extremely stable. This is the cosmological constant problem[(2)]. All multiple universes are extremely stable because of the nucleus.

2.7 Mass of photon

In (b), photon β_G^{56} is attached to muon neutrino and induces electromagnetic force in quantum space. Sun light is the photon β_g^0 independently located in our empty space 0D. Quantum space imparts mass to particle[(1)]. Therefore, the photon β_G^{56} located in 5D6D has a mass, but the light β_g^0 located in our empty space has no mass.

However, our universe is a very large spherical quantum particle. That is, it means that the XYZ coordinates of our

Table 1 Calculation of space dimension. It is judged that kinetic dimension and steady dimension are the same.

Term	Figure	Electron	Muon	Tau	Unit	Symbol		
Lepton	Mass	510.999k	105.658M	1.77686G	eV	$\mathrm{AB}\Gamma_{NG}^{456}$	$\mathrm{B}\Gamma_{NG}^{56}$	Γ_{NG}^{6}
Combination	Fig. 1(d)	5.708	8.024	9.25	log	$\alpha\beta\gamma_{NG}^{456}$	$\beta\gamma_{NG}^{56}$	γ_{NG}^{6}
Oscillation	Fig. 1(c)	1.077	6.798	9.25	log	α_{NG}^{456}	β_{NG}^{56}	γ_{NG}^{6}
	Mass	11.9523	6.28282M	1.77686G	eV	A_{NG}^{456}	B_{NG}^{56}	Γ_{NG}^{6}
Oscillating	Fig. 3, 4, 5	9.111	9.108	9.25	log	α_{na}^{6}	β_{na}^{6}	γ_{na}^{6}
	Fig. 3, 4	4.539	4.435	-	log	α_{na}^{5}	β_{na}^{5}	-
	Fig. 3	-10.418	-	-	log	α_{na}^{4}	-	-
Quantum	Space	4D	5D	6.001D	Dim.			
Standard	Fig. 1(a)	-10.418	4.435	9.25	log	α_{na}^{4}	β_{na}^{5}	γ_{na}^{6}
Fig. 1(a)	Neutrino + Gravino	3.82E-11	27.20k	1.777G	eV	A_{na}^{4}	B_{na}^{5}	Γ_{na}^{6}

$\alpha\beta\gamma_{NG}^{456} = (\alpha_{NG}^{456} + \beta_{NG}^{56} + \gamma_{NG}^{6})/3$ $\quad$ $\beta\gamma_{NG}^{56} = (\beta_{NG}^{56} + \gamma_{NG}^{6})/2$ $\quad$ $\gamma_{NG}^{6} = \gamma_{NG}^{6}/1$

$\alpha_{NG}^{456} = (\alpha_{ng}^{4} + \alpha_{ng}^{5} + \alpha_{ng}^{6})/3$ $\quad$ $\beta_{NG}^{56} = (\alpha_{ng}^{5} + \alpha_{ng}^{6} + \beta_{ng}^{5} + \beta_{ng}^{6})/4$ $\quad$ $\gamma_{NG}^{6} = (\gamma_{ng}^{4} + \gamma_{ng}^{5} + \gamma_{ng}^{6})/3$

universe have been quantized into a sphere. Because of this, the light β_g^0 has a very small mass of the order above.

2.8 Oscillation phenomena

As shown in Fig. 1(c), neutrinos also oscillate dimensionally. Therefore, the drawing of (c) is the oscillating combined particle of neutrino and gravino particles.

2.9 Combined particles

In Fig. 1(d), electron $\alpha\beta\gamma_{NG}^{456}$ is the combination of oscillating α, β, and γ particles, muon is the combination of oscillating β and γ particles, and tau is the oscillating γ particle. That is, in a particle accelerator experimental device, when an electron collides, the α shell peels off and becomes a muon, and when the muon collides, the β shell peels and becomes a tau.

3. Mass calculation for electron, muon, tau

3.1 Measured mass

In Fig. 1(d), the measured masses of electron 510.999 keV, muon 105.658 MeV, tau 1.77686 GeV are shown in Table 1. Quantum space is compressed logarithmically. Therefore, each logarithmic value is electron $\alpha\beta\gamma_{NG}^{456}$ 5.708, muon $\beta\gamma_{NG}^{56}$ 8.024, tau γ_{NG}^{6} 9.250.

3.2 Oscillating particle masses

The masses of Fig. 1(c) are calculated by Equation 1) in Table 1. α_{NG}^{456}, β_{NG}^{56}, and γ_{NG}^{6} are 1.007, 6.798, and 9.250.

3.3 Standard particle masses

The mass of (a) proceeds from (c), and it is calculated from Table 1 Equation 2).

Step 1) γ_{ng}^{4}, γ_{ng}^{5}, and γ_{ng}^{6} is all equal 9.250.

Step 2) Assume α_{ng}^{4} and β_{ng}^{5} such as -10.418 and 4.435.

Step 3) Find the dimension of tau with logarithmic ellipse equation such as Fig. 2. Where, α_{ng}^{4} is located on 4D, β_{ng}^{5} is located on 5D, 0D is left vertex, and γ_{ng}^{6} is upper vertex. From this, the vertex of γ_{ng}^{6} is calculated as 6.00108D.

Step 4) Find the α_{ng} oscillating values. Where, β_{ng}^{5} is 4.435, γ_{ng}^{6} is 9.250, 0D is left vertex, and 6.00108D is upper vertex. Calculating above, the solutions of Fig. 2 and Fig. 3 are calculated at the same time. That is, there are three values of α_{ng}^{4} -10.418, α_{ng}^{5} 4.539, and α_{ng}^{6} 9.111. All is correct answers. Therefore, the value of α_{NG}^{456} is the average 1.077 of above three values. This value should be equal to Fig. 1(c). If it is wrong, go to Step 2).

Step 5) Find the β_{ng} oscillating values. Where, α_{ng}^{4} is -10.418, γ_{ng}^{6} is 9.250, 0D is left vertex, and 6.00108D is upper vertex. Calculating above, the solutions of Fig. 2 and Fig. 4 are calculated at the same time. Here, take the four values on β_{ng}^{5} 4.435, β_{ng}^{6} 9.216, β_{ng}^{5} 4.435 and β_{ng}^{6} 9.250 in Fig. 3 and Fig. 4. Therefore, the value of β_{NG}^{56} is the average 6.798 of above four values. This value should be equal to Fig. 1(c). If it is wrong, go to Step 2).

Step 6) Find the γ_{ng} oscillating values. Where, α_{ng}^{4} is -10.418, β_{ng}^{5} is 4.435, 0D is left vertex, and 6.00108D is upper vertex. Calculating above, the solutions of Fig. 2 and Fig. 5 are calculated at the same time. Here, take the three values on γ_{ng}^{6} of Fig. 3, γ_{ng}^{6} of Fig. 4, and γ_{ng}^{6} of Fig. 5. Since they are all the same value 9.250, this does not need to be calculated.

3.4 6.00108 dimension of space

The correct answer of above calculation is 6.00108D. Why is it 6.00108, not exact 6? In previous study(2), it was described that there are a lot of 6D universes and one 5D universe in super origin universe. It is judged that the 6D of our universe has been transformed very finely due to the influence of the 5D universe.

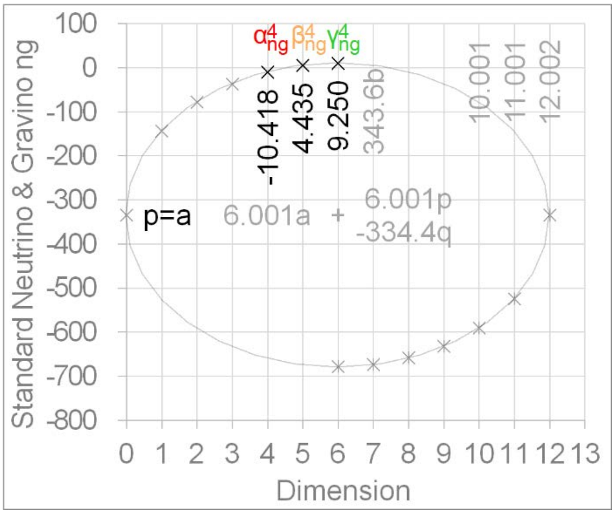

Fig. 2 Standard mass of neutrino and gravino

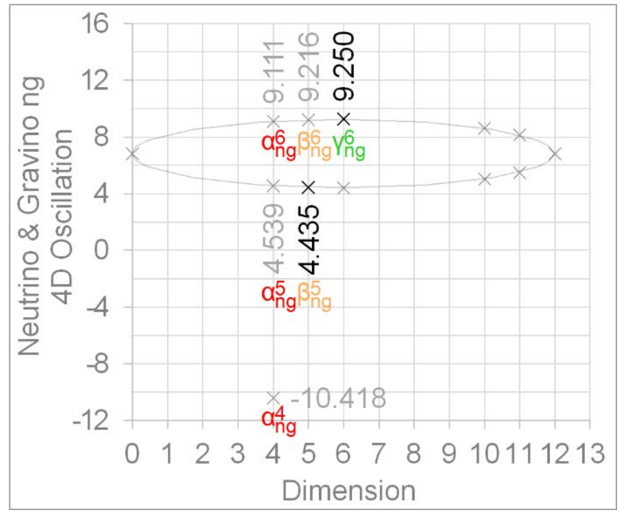

Fig. 3 Oscillating mass of neutrino and gravino at 4D

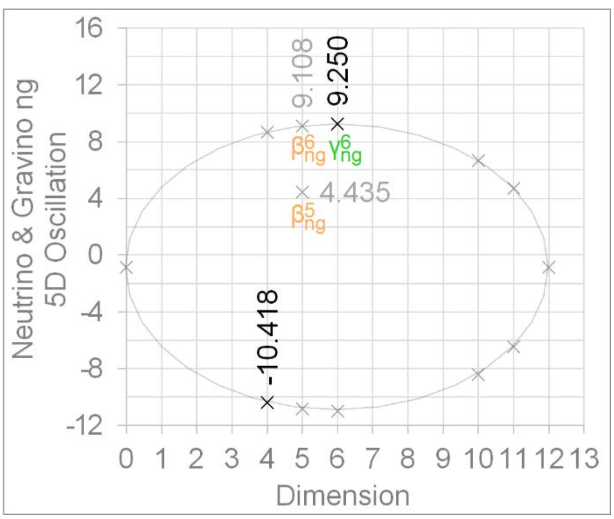

Fig. 4 Oscillating mass of neutrino and gravino at 5D

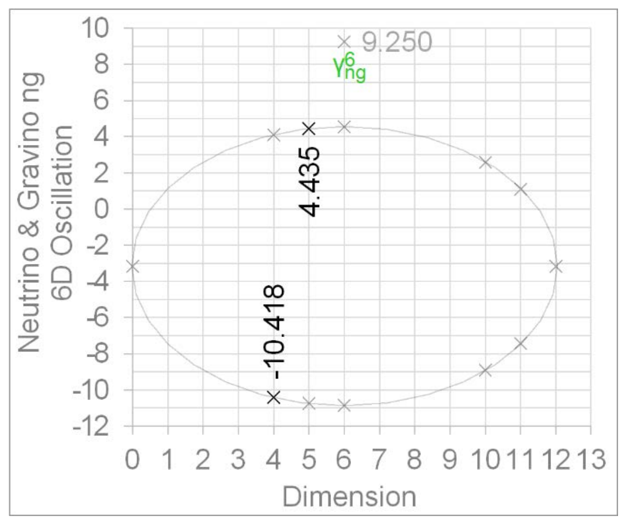

Fig. 5 Oscillating mass of neutrino and gravino at 6D

In previous study(1), H boson was calculated as 124.98 GeV at 6D and 125.02 GeV at 6.00108D. According to this calculation, 125.02 GeV is the correct answer.

Currently, the cosmological constant Λ was measured as 1.1056E-52. According to author's calculation, Applying 6D, the Λ is calculated as 80.3% ~ 82.7% based on the measurement, and applying 6.00108D, Λ is calculated as 98.4% ~ 101.3% based on the measurement. 6.00108D is confirmed to be the correct answer. The calculation of Λ will be described in detail in a future paper.

3.5 Shape of quantum space

In previous study(1), the shape of quantum space was simply suggested. The shape of quantum space that satisfies Fig. 2 ~ 5 can be proposed by a mathematician.

4. Conclusions

Electron, muon, and tau are the combined particles of three generation neutrinos and gravinos. Applying the logarithmic elliptic equation to them, the dimension of space is calculated as 6.00108.

Four major forces and dark energy must be interpreted as a kinetic state, particles must be interpreted as a steady state, and cosmological changes must be interpreted as the combination of above two. The kinetic dimension and the steady dimension may be different each other. However, they are judged to be the same.

References

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