Explaining the Generations of the Standard Model for the Muon

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Abstract

There is a mystery in particle physics. What is the reason for the generations? What is the reason for the masses of the particles in the Standard Model. This paper shows that spinning sphere theory may explain the reason for the generations. In spinning sphere theory our universe starts with one particle for zero-dimensional point. Two particles for a one-dimensional string that corresponds to the Muon, Six particles for a two-dimensional ring, corresponding to the electron. 42 particles for the 2nd layer of a cuboctahedron for a three-dimensional particle, corresponding to the tauon. This paper specifically focuses on the muon. More papers will come for the electron and the tauon.

This paper finds that the masses of the 2nd and 3rd generation particles, for the leptons, are related to the ratio of energies jumping from one orbital to another orbital. These are not the orbitals of the proton electron orbitals, but rather within their own fields. They could be orbitals within the leptons themselves.

This theory also proposes that, like De Broglie waves, where matter has wave like properties, there are dark orbitals, where jumping between orbital becomes the matter that we observe when the wave function collapses. This theory of dark orbitals comes directly from the prediction for the masses of particles.

1.0 Calculations

There is a mystery in particle physics. What is the reason for the generations? What is the reason for the masses of the particles in the Standard Model. This paper shows that spinning sphere theory may explain the reason for the generations. In spinning sphere theory our universe starts with one particle for zero-dimensional point. Two particles for a one-dimensional string. Six particles for a two-dimensional ring. 42 particles for the 2nd layer of a cuboctahedron for a three-dimensional particle. There is a mystery in particle physics. What is the reason for the generations? What is the reason for the masses of the particles in the Standard Model. This paper shows that shows that spinning sphere theory may explain the reason for the generations. It is found that the particles are like the spectral lines of hydrogen. This two particle, six particle, forty-two particle arrangement was found in "Predicting the Gravitational Constant from the New Physics of a Rotating Universe"[2] The two particle, six particle, and forty-two particle arrangement is part of the increase in angular momentum between levels of the dimensions of space. These increases in the angular momentum are basic to the structure of the levels of the universe, but also within a universe level there are many fractals. These fractals are the basis for the generations of particles.

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In "Muon-Neutron and Tauon-Neutron Mass ratio Prediction"[1] It was predicted that the muon neutron mass ratio would be 0.1124545198 and the tauon neutron mass ratio would be 1.8910789. These predictions are part prediction and part trying to figure out where the masses come from. In the calculation for the muon neutron mass ratio there was a factor of $\frac{1}{9}$ for the tauon neutron mass ratio the factor was $\frac{17}{9}$. It is clear, when looking at the masses of the muon and tauon, that they are approximately $\frac{1}{9}$ and $\frac{17}{9}$ the mass of the neutron, respectively. This paper shows a possible source for these numbers, $\frac{1}{9}$. The $\frac{17}{9}$ will be discussed in another paper for the tauon. It may mean that the electron, muon, and tauon are like photons traveling between energy levels, or dark orbitals.

When one looks at the following equation for the mass ratio of the proton to the neutron, developed by this author, one sees that it has a ratio found in the energy equation for orbitals. Please note that the paper "An Electro Magnetic Resonance in 9 Dimensions that gives Mass Ratio of Proton to Neutron"[3] predicts a proton neutron mass ratio of 0.9986234786761

predicts a mass ratio

$$\frac{\lambda_p}{\lambda_n}\frac{(-\beta^2(1-\beta^2)-(\vec{\beta}\times\dot{\vec{\beta}})^2)}{\sqrt{3}}=\int_0^{pi/2}(\frac{Cos\theta}{2})^9 d\theta$$ where

The following values are substituted in. $n_{1p}=1,\ n_\infty=\infty, n_{1n}=1, n_\infty=\infty$ which yields

$$\frac{\lambda_n}{\lambda_p}=\frac{R_\infty(\frac{1}{1^2}-\frac{1}{\infty^2})}{R_\infty(\frac{1}{1^2}-\frac{1}{\infty^2})}=1$$

The same substitution for orbital ratios used for the proton can be used for the muon. The muon

The Muon is the 2nd Generation of the Leptons. The following is an empirical calculation for the ratios of energy levels of the Muon. Currently, no one has figured out the reason for the generations of the particles, or the phenomena that causes the mass of the particles. This empirical model is being developed. As it is being built, the mechanics of it may begin to be understood. It is assumed, that when taking the ratios of the energy levels of the dark orbitals, that the other variables cancel out. Note that there is also a factor of $\frac{2}{6}$ This factor comes from the ratio of particles in the one-dimensional string and the 2-dimensional ring. The two-dimensional ring corresponds to the electron, the one-

dimensional string corresponds to the muon. The three-dimensional 2nd layer of the cuboctahedron corresponds to the tauon.

Ratio of Energy levels.

$$(\frac{1}{2^2}-\frac{1}{4^2})=\frac{3}{16}$$

$$(\frac{1}{2^2}-\frac{3}{4^2})=\frac{1}{16}$$

Origin of the almost one ninth value of the muon to neutron mass ratio.

$$Oneninthvalue=\frac{particlesinonedimensionalstring}{particlesintwodimensionalring}*ratiooforbitalenergies$$

$$\frac{1}{9}=\frac{2}{6}\frac{\frac{1}{16}}{\frac{3}{16}}$$

2.0 Discussion

Finding the reason for the generations of particles in the standard model has been elusive. Trying to figure out the reason for the masses of particles in the standard model has been elusive. This paper shows that the generations may be related to different dimensions of spheres. Although a sphere is 3 dimensional, we, may in a sense, call a single sphere a point particle, two spheres, a one-dimensional string, six spheres a two-dimensional ring, and 42 particles a three-dimensional 2nd layer of a cuboctahedron.

The different dimensions of spheres were discovered when looking at the discovery of predicting the gravitational constant to be $6.674379*10^{-11}\frac{m^3}{kg^2s}$. We found that the different dimensions of spheres were built by stable levels of the square of the angular momentum. With particles in our level of the universe, this stable levels of the square of angular momentum are fractals of other levels of the universe.

We find here that the muons mass, is in part, about one ninth of the mass of the proton or neutron. This comes about due to ratios of orbital energies.

As more of this information is built up with mechanics and empirical values, it may be easier to discover the mechanics for the whole system.

4.0 References

[1] https://vixra.org/abs/1612.0122

[2] https://vixra.org/pdf/1903.0253v5.pdf

[3] https://vixra.org/pdf/1612.0302v3.pdf