## 1.0 Abstract

It was found in other papers by Michael John Sarnowski that there appears to be a relationship between a process similar to Bremsstrahlung and Cherenkov radiation and the mass ratios of the Proton, Electron, Muon, and Tau to the Neutron. This correlation also is used to make predictions for these ratios and the Sommerfeld Fine-Structure Constant and the von Klitzing constant. Relating this to a possible granular crystalline cuboctahedron structure of space-time. The predictions for these ratios and constants will be listed in section 2.0. Section 3.0 is the conclusion. This paper is the summary of various other papers by Michael John Sarnowski, which are listed in the reference section.

## 2.0 Predictions of Mass Ratios of particles, the Sommerfeld Fine-Structure constant, and the von Klitzing constant. The Codata Values are listed to the side.

Proton Neutron Mass Ratio(3)

$$\frac{Mp}{Mn} = 0.9986234786761$$ Codata 0.99862347844(51)

Electron Neutron Mass Ratio(5)

$$\frac{Me}{Mn} = 5.438673444242 * 10^{-4}$$ Codata 5.4386734428(27) x 10-4

Proton Electron Mass Ratio(2)

$$\frac{Mp}{Me} = 1836.152673835$$ Codata 1836.15267389(17)

Muon Neutron Mass Ratio(4)

$$\frac{Mu}{Mn} = 0.1124545198$$ Codata 0.1124545167(25)

Tau Neutron Mass Ratio(4)

$$\frac{Mt}{Mn} = 1.8910789$$ Codata 1.89111(17)

Inverse Sommerfeld Fine-Structure Constant(6)

$$\sigma^{-1} = 137.035999097020$$ Codata 137.035999139(31)

von Klitzing Constant(1)

$\frac{h}{q^2} = 25812.80744812 ohms$ Codata 25812.8074555(59) $\Omega$

The predictions for the mass ratios and constants above are predictions made to test the hypothesis that the equations used to derive them are more than empirical, that there are underlying resonances in the structure of the universe, that make the universe, more than perfection, that makes the universe interesting because it has defects. It is expected that it might take 4 -16 years or more to achieve better measurements to either partially confirm or partially falsify the Bremsstrahlung Cherenkov Radiation Resonance Hypothesis of Mass Relations of Particles and Sphere Theory of the Universe.

## 3.0 Conclusion

It appears the mass ratios of particles and the fine structure constant are related to a Cherenkov and Bremsstrahlung radiation. Likely these particles are a multitude of stable resonances. The empirical numbers seem to indicate a crystalline type of granular structure to space-time. Most probably cuboctahedron structure. They also indicate many resonances as the particles seem to be related to each other. The mass ratio of particles seem to be related to fractions of the speed of light. At least some of the particles seem to be related to orbitals like the electrons relationship to the proton. These equations are empirically derived, but it defies belief that these arrangements are or could be mere coincidence. It is the start of the derivation of a dimensionless granular universe.

The predictions of mass ratios, Sommerfeld fine-structure constant, and the von Klitzing Constant are given so that it is a verification of Michael John Sarnowski's Sphere Theory, Cuboctahedron Structure of the Universe Theory, and Bremsstrahlung Cherenkov Radiation type Resonances theory.

## 7.0 References


1) Prediction of the von Klitzing Constant http://vixra.org/pdf/1612.0355v3.pdf
2) Prediction of the Mass Ratio of the Proton to the Electron http://vixra.org/pdf/1612.0326v1.pdf
3) An Electro Magnetic Resonance in 9 Dimensions that gives Mass Ratio of Proton to Neutron http://vixra.org/pdf/1612.0302v2.pdf
4) Muon-Neutron and Tauon-Neutron Mass ratio Prediction http://vixra.org/pdf/1612.0122v1.pdf
5) An Electro Magnetic Resonance in 9 Dimensions that gives Mass Ratio of Electron to Neutron http://vixra.org/pdf/1612.0068v3.pdf
6) Prediction for the Dimensionless Sommerfeld Fine-Structure http://vixra.org/pdf/1611.0364v4.pdf
7) Evidence for Granulated, Granular Topological Spacetime http://vixra.org/pdf/1601.0234v3.pdf
8) http://physics.nist.gov/cuu/Constants/