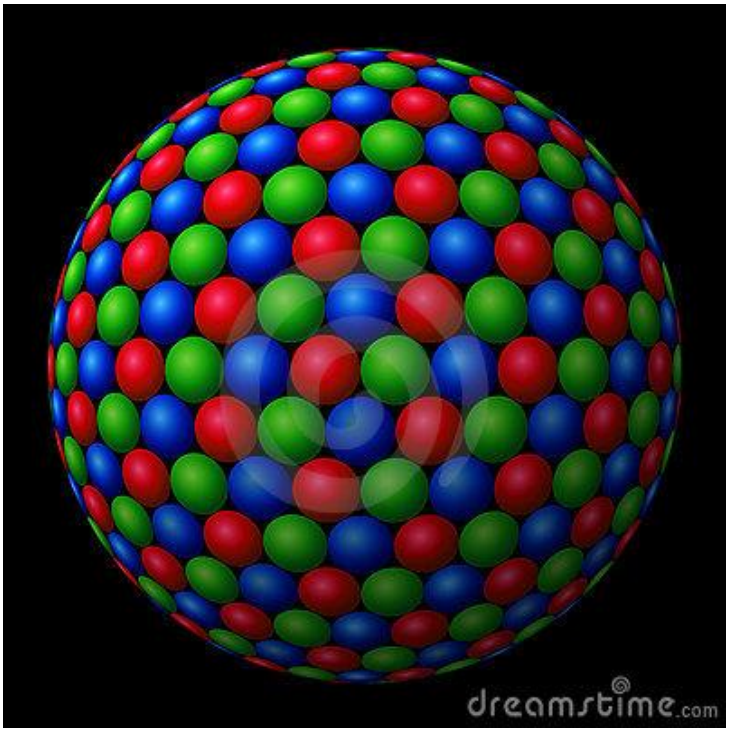
Sphere Theory and Planck Mass

1.0 Abstract

In “Evidence for Granular Space-time”(1), Sphere Theory was proposed as a hypothesis by the author that the universe is a sphere made of spheres that again are made of smaller spheres. The levels of spheres, that were studied, are as follows; the Hubble sphere, which is of the order of 13.8 billion light years in radius; the Planck Sphere, which is the order of the Comptom wavelength of the neutron; and Kaluza sphere, which has Planck dimensions. The value N=6.57920*10^40 was determined to be the amount of Kaluza spheres on the outside of three Planck spheres. If we assign mass to be equivalent to a number of spheres we can show that Planck Mass is the number of Kaluza spheres in the volume of 3 Planck Spheres and The mass of the Neutron is layer of Kaluza spheres on the surface of 3 Planck Spheres. It was discussed in “The Holographic Principle and How can the Particles and Universe be Modeled as a Hollow Sphere” (2), that active part of the Planck Sphere and Hubble Sphere is due to imperfections in the packing of spheres with spheres, that turns out to be almost exactly equivalent to the outer surface of the sphere. Although these imperfections of packing are throughout the sphere, they are equivalent to outer packing surface of the sphere. It is these imperfections that are the only pieces of information in the sphere, the rest is perfectly packed and offer no information.

Sphere made of spheres. (3)



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2.0 Calculation of Planck Mass

In “Evidence for Granular Space-time” (1) the following equation was developed for the quantity “N”

$$N = \frac{2hc\pi^3}{G(Mn)^2} = 6.57920*10^{40} \qquad \textbf{[1]}$$

Where h is Planck’s constant, c is the speed of light, G is the gravitational constant, and Mn is the mass of the neutron.

We discuss that N is the amount of Kaluza Spheres on the outside of 3 Planck Spheres. This value N is where all the mass of the neutron is derived in. As discussed in “The Holographic Principle and How can the Particles and Universe be Modeled as a Hollow Sphere” (2), it is explained why discontinuities or imperfections in spheres packed with spheres are equivalent to the outer layer of the packed sphere.

Therefore it is an easy calculation to find the amount of mass per Kaluza sphere and the amount of Kaluza spheres in the volume of the Planck Sphere. Then an equivalent mass for the volume of the Planck Sphere can be calculated, which turns out to be the Planck mass.

Mass of Kaluza Sphere = Mk

$$Mk = \frac{Mn}{N} = \frac{1.674927471*10^{-27}}{6.57920*10^{40}} = 2.54579*10^{-68}\,Kg \qquad [2]$$

Radius of the Planck Sphere in Kaluza Spheres=Rp

$$Rp = \sqrt{\frac{N}{4\pi}} = \sqrt{\frac{6.57920*10^{40}}{4\pi}} = 7.23571*10^{19} \qquad [3]$$

Volume of Kaluza Spheres within the 3 Planck Spheres=Vk

$$Vk = \frac{4*Rp^3}{3}\pi = \frac{4*(7.23571*10^{19})^3}{3}\pi = 1.58684*10^{60}\,spheres \qquad [4]$$

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Planck mass=Mp

The factor $\frac{18^{0.5}}{\pi}$ is the inverse maximum packing efficiency of spheres.

$$Mp = Vk * Mk * \frac{18^{0.5}}{\pi} = 1.58684 * 10^{60} * 2.54579 * 10^{-68} * \frac{18^{0.5}}{\pi} = 5.4556 * 10^{-8} kg \quad [5]$$

Which is Planck mass exactly

Where

$$Mp = \sqrt{\frac{hc}{G}} = 5.4456 * 10^{-8} kg \quad [6]$$

3.0 Discussion

The calculations in Section 2 shows that a sphere made of spheres is consistent with the fundamental constants.

4.0 References

1) http://vixra.org/pdf/1601.0234v4.pdf
2) http://vixra.org/pdf/1601.0103v1.pdf
3) DreamsTime.com