1.0 Abstract

It is becoming clear, that experimental physics will not be enough to develop the model for the construction of the Universe. Statistical Probability will be necessary for developing the model and proving the model. The equations in this paper predict a value for the Planck Constant, from other fundamental constant for each Codata year since 1969. The data below shows a calculating equation that predicts a Planck constant within 0.2 sigma of the actual Codata value for the Planck constant over six publications of Codata in a row, since 1986. The data below shows a calculating equation that predicts a Planck constant within 0.25 sigma of the actual Codata value for the Planck constant over seven publications of Codata in a row, since 1973. To randomly generate an equation to do this, when the data has become more accurate by a factor of 100 times over this time period, is highly unlikely, perhaps as unlikely as one out of a 100000. In addition, over the last six Codata publications, the equations below have been closer to the next Codata publication for the Planck constant. This again is unlikely, but not unheard of. The sum of these data show that the mechanism for determining the Planck constant, must be mirroring the calculations, and must be measuring the same phenomena.

2.0 The Equation for Planck's Constant

It is known that the Rydberg infinity constant is the most precise physical measurement in physics and that it can also be calculated from fundamental constants and the mass of the electron. It's value is shown below

$$R = \frac{Meq^4}{8\varepsilon^2 h^3 c} = 1.0973731568539 * 10^7 m^{=1} \quad [1]$$

We found from "Discrete Calculations of Charge and Gravity with Planck Spinning Spheres and Kaluza Spinning Spheres", Michael John Sarnowski (2) that the following equation for q,

$$q^2 = T\pi^3 hc\varepsilon \frac{Me}{2Mn} \quad [2]$$

modeled Discrete unit charge. We can rearrange the equation for elementary charge and the equation for the Rydberg constant as follows.

$$\frac{q^4}{\varepsilon^2} = \frac{8Rh^3 c}{Me} \quad [3]$$

$$\frac{q^2}{\varepsilon} = \frac{T\pi^3 hcMe}{2Mn} \quad [4]$$

Equation 4 can then be squared and equalized and then solved for h which yields

$$h = \frac{T^2 \pi^6 cMe^3}{32Mn^2 R} = 6.62606935 * 10^{-34} \, joulesec \quad [5]$$

This compares to the codata value of $6.62606957(30)*10^{-34}\ joulesec$

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Note the following

$$T^2 = \frac{1}{\sqrt{1-(\frac{\pi 2^{0.5} Me}{3*3Mn})^2}}[(\frac{Mp-Me}{Mn})^2+(\frac{Mn}{Mn})^2+(\frac{Mn}{Mn})^2] \qquad [6]$$

Equations 1-6   Where h=planck's constant, c=speed of light in a vacuum, Mn=rest mass of the neutron, Mp=rest mass of the proton, and Me=rest mass of the electron Ɛ=dielectric permittivity and R=Rydberg constant at infinity. T is defined in Equation 5

Where q=elementary charge, h=Planck's constant, Ɛ=dielectric permittivity, c=speed of light, Me=Mass of the Electron, Mp=Mass of Proton, and Mn=Mass of Neutron, R=Rydberg constant at infinity and T is defined below.

3.0 Calculation of Planck Constant

The following data below, is the calculation of the Planck constant using Equation 5, then compared to the Codata value for the Planck constant for that respective year. On the far right side of the equation, the how many sigma the calculated value from equation 5 is to the Codata Planck constant for that respective Codata year.

Codata year	Planck Constant Equation 5	Planck Constant Codata(3)	Ratio of Equation 5 to Codata value	How close is Equation 5 to Codata Planck Constant
1969	**6.626507E-34**	**6.626186(57)E-34**	**1.00004840924**	**5.63 sigma**
1973	**6.6261856E-34**	**6.626176(38)E-34**	**1.00000144360**	**0.25 sigma**
1986	**6.62607472E-34**	**6.6260755(40)E-34**	**9.99999882796.**	**0.2 sigma**
1998	**6.62606886E-34**	**6.62606876(52)E-34**	**1.00000001600.**	**0.19 sigma**
2002	**6.62606935E-34**	**6.6260693(11)E-34**	**1.00000000855.**	**0.045 sigma**
2006	**6.626069021E-34**	**6.62606896(33)E-34**	**1.00000000933.**	**0.18 sigma**
2010	**6.626069575E-34**	**6.62606957(29)E-34**	**1.00000000079.**	**0.034 sigma**
2014	**6.6260700408E-34**	**6.626070040(81)E-34**	**1.00000000012.**	**0.012 sigma**

Table 3   Planck constant table.

The chance of a value being within 0.2 sigma is about one sixth. To do this for 6 Codata years in a row is about one out of 100000. Please note, that is 3 codata years, the value is much closer than 0.2 sigma. In 1969 and 1973, there is no calculated ratio for the electron to the neutron, thus the accuracy of the data is much, much less. In addition, the value for the electron mass and elementary charge were much less well known.

Please note, that the values calculated since 1986, from Equation 5, are closer to the next Codata publication, than the previous Codata publication for the Planck constant.

4.0 Discussion

The predicted values of Planck's Constant close are close to the limits of the Codata value. Although this does not prove that Equation 5 is correct, the values predicted leave open the possibility that the, Equation 5, could be correct. The value in Equation 5 is empirical. There have been many attempts at numerology to determine fundamental physical constants. This is looked at with contempt by many scientists. When in truth, most of physics is a combination of data, theoretical physics, statistics, creativity, model making, guess work, opportunity, and luck. The statistical probability of Equation 5 yielding the above results is probably a combination of the previous sentence.

5.0 References

1 http://vixra.org/pdf/1407.0148v2.pdf

2 http://vixra.org/abs/1507.0128

3 http://physics.nist.gov/cuu/Constants/index.html

4 http://vixra.org/pdf/1502.0193v2.pdf