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To Prof. Em. **Eric G. Adelberger**
and The „Eöt-Wash“-Group

Center for Experimental Nuclear Physics and
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Newton's Gravitational Constant G, theoretical and experimental value

Dear Professor Adelberger and members of the Eöt-Wash Group!

My letter to you origins from the home country of Count von „Eöt-Wash“, as I live in Hungary.

I am contacting you regarding new possibilities based upon my Unified Theory of Nature Constants (<http://www.naturkonstanten.info>) on how to look upon the **Newton's Gravitational Constant G**.

As it is known, the Newton's Gravitational Constant G had always a rather isolated place among the recommendations of CODATA, due to the fact this fundamental Constant could not yet be integrated into a Homogeneity of physics. My theory exhibits the Newton's Gravitational Constant G as an integrated quantity, due to the following correlation to other micro physical Constants:

$$G \equiv \left(\frac{h}{1m} \right)^5 \cdot \frac{\alpha^2}{c^2 \cdot m_{oe}^6} \cdot \frac{1s}{(4\pi)^3}$$

$h = 6,62606896(33) \cdot 10^{-34} \text{Ws}^2$ (Planck's constant),

$\alpha = 7,2973525376(50) \cdot 10^{-3}$ (Sommerfeld's fine-structure constant),

$c = 299792458 \text{ms}^{-1}$ (Vacuum-speed of light),

$m_{oe} = 9,10938215(45) \cdot 10^{-31} \text{kg}$ (Mass),

and 1m = 1 meter, 1s = 1 second

The here shown values with relative standard deviations correspond the recommendations of CODATA 2006. They result in a **theoretical value** for $G = 6,674302\dots \cdot 10^{-11} m^3 kg^{-1} s^{-2}$.

The Codata 2006 recommendation resulted in $G = 6,67428(67) \cdot 10^{-11} m^3 kg^{-1} s^{-2}$.

If you confront the newly discovered formula above, (equation no. 6 in the original publishing) with the values recommended by CODATA in 1998 you will find that the theoretical value for G in my publication already that time showed $G = 6,674302\dots \cdot 10^{-11} m^3 kg^{-1} s^{-2}$ even the experimental CODATA value recommendation of $G = 6,673(10) \cdot 10^{-11} m^3 kg^{-1} s^{-2}$ was still very far from the 2006 value.

I think we all can agree upon that the Newton's Gravitational Constant G also deserves a theoretical approach to it's value's definition. In the meantime it seems that the experimental development confirmed in this context - also supported through your work- that the theoretical fundamentals of my discovery deserve more attention, as they approached the Newton's Gravitational Constant G already more exact before the experimental value definition.

My calculations are based upon an Axiomatic Approach (Dr. Endre Kereszturi: Axioma Physica Hungarica. See also: <http://www.mek.oszk.hu-02420>) which is the fundamental to the Unified Theory of Nature Constants as well.

As a quick numeric control serves a derivation of a simple equation of the formula above, of course keeping the correct dimensions:

$$G \equiv \frac{10^{-14}}{16\pi} \cdot \frac{h^3 \cdot e^4}{m_{oe}^6} \cdot \frac{kg^2}{A^4 \cdot m^3 \cdot s^3}$$

The e is here the elementary load; $e = 1,6021764878(40) \cdot 10^{-19} As$

The **numeric connection** between G, h, e and m_{oe} is therefore **metrologic row** of the chosen SI units.

I am continuing to follow your more and more exact calculations with interest. I would be glad, if theoretical and experimental science could strengthen and when ever possible confirm each other also (and especially) in the search of such an important Constant as the Newton's Gravitational Constant G.

If I could raise your interest for my work, I of course gladly answer your questions.

The informations above have been sent on 2008 June 24th directly to Mr Horst Kremers, the president of CODATA Germany as well.

With the best wishes for the Eöt-Wash group's further research

sincerely,

Dr. Endre Kereszturi