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Big G , the GEM (gravity Electro-Magnetism) Unification Theory, and the X17 particle mass J. E. BRANDENBURG, Kepler Aerospace LLC — The GEM unification theory results in a formulas for G, the Newton Gravitation constant , and the proton mass, that are highly accurate and easily derived from the requirement that the deployment of the KK hidden dimension separates both EM and gravity and electrons and protons from each other with the 5th dimension deployment from the Planck scale. [1] This is described by the formula $\ln(r_o/r_p) = (m_p/m_e)^{1/2} = 42.8503 = \sigma$ where m_p and m_e are the proton and electron rest masses r_o is the hidden dimension deployed size $r_o = e^2/((m_p * m_e)^{1/2}c^2)$, where e is the electron charge in esu units, and r_p is the Planck length . This formula is easily inverted to give the highly accurate formula : $G = (\alpha e^2/(m_p * m_e)) * \exp(-2((m_p/m_e)^{1/2})) = 6.668 \times 10^{-8} \text{dyne} - \text{cm}^2 - \text{g}^{-2}$ [1], where α is the fine structure constant. The theory predicts a particle at $m_o=22\text{MeV}$ and also at $m_o/(1 + \alpha\sigma) \cong 16.7\text{MeV}$, the same mass as the X17 particle. [1] Brandenburg J.E.,(2016) GEM Unification Theory , Jou. Multidisciplinary Eng. Sci Studies, Vol. 2, 7, July.

J.E. Brandenburg
Kepler Aerospace LLC

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