LOGIC BEHIND THE SQUARED AVOGADRO NUMBER AND SUSY

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ABSTRACT

The definition of Avogadro number (N) and the current experiments to estimate it, however, both rely on the precise definition of "one gram". Hence most of the scientists consider it as an ad-hoc number. But in reality it is not the case. In atomic and nuclear physics, atomic gravitational constant (G_A) is squared Avogadro number times the Newton's gravitational constant and is discrete as $(n.G_A)$ where n =1,2,3. Key conceptual link that connects the gravitational force and non-gravitational forces is - the classical force limit, $F_C \cong (c^4/G)$. Ratio of classical force limit and weak force magnitude is $(F_C/F_W) \cong N^2$. It can be suggested that, fermion and its corresponding boson mass ratio is not unity but a value close to $\Psi \approx 2.2627$. This idea can be applied to quarks, leptons, proton and the Higgs fermion. One can see "super symmetry" in low energies as well as high energies. Thus in this paper authors proposed unified methods for estimating the Avogadro number.

KEYWORDS: Avogadro Number, Gravitational Constant, Classical Force Limit, Weak Force Magnitude, Gram Mole, SUSY, Weak Coupling Angle, Proton Rest Mass, Proton Rms Radius, Higgs Fermion, Higgs Boson, Z Boson, W Boson