Unit at the Planck units

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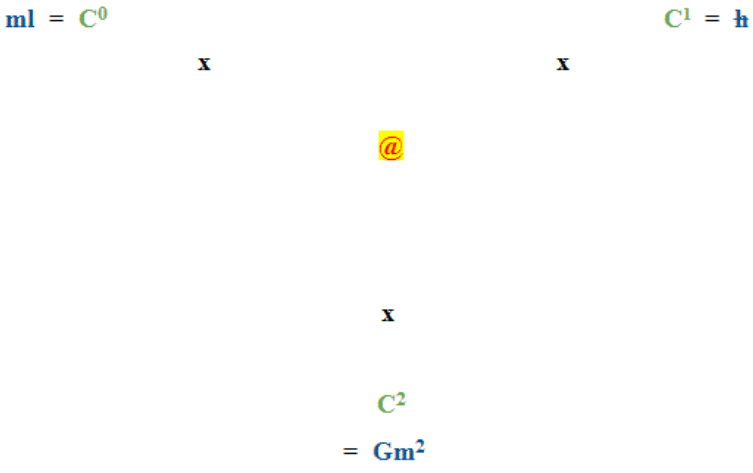
Abstract

The Planck units [1] are defined from fundamental physical constants. Ontologically we note that the coupling constant, intrinsic to the Planck charge, generates on space-time the interlacing of the dimensioned constants ml, h, G, iterated in geometric progression of reason c, the speed of light. As alpha is also "*the ratio of the velocity of the electron in the first circular orbit of the relativistic Bohr atom to the speed of light in the vacuum*" [2], we have here one-all : "*A very simple structure is not incompatible with the inexhaustible character of the information contained as well in physics as in mathematics* ". A.Connes, Fields medal [3]

* Christian J.Bordé, Academician, writes about the fine structure constant, alpha : "*The whole of electromagnetism should be described by means of this constant alone, without the help of any additional base unit, or any other fundamental constant ... such as the electron charge. This point can be discussed in more concrete terms by means of Dirac and Maxwell's equations*" [4]
* Pierre Fayet, Academician, specifies : "*The charge of the electron is a quantity both measured and dimensionless ... The coulomb, unit of electric charge, is a unit derived from the mechanical and even geometric units, while of course also being dimensionless*" [5]

With q the Planck charge, put @ = f(α) = $q^2/10^7$, the ultimate quantum of interaction. This in"form"ation emerges in dimension on the two characteristics of the vacuum implicitly related to π, the unit $\varepsilon_0\mu_0c^2$. According to codata 2014 its numerical value $q^2/10^7$, ie **3.51767263×10^{-43}** [a], is equivalent to that
of the quantum ml/c^0 (at rest), ie $2.176470\times10^{-8}\times1.616229\times10^{-35}$ = **3.51767393×10^{-43}** [b],
of the quantum $\hbar/c^1$, ie $1.054571800\times10^{-34}/2.99792458\times10^8$ = **3.51767288×10^{-43}** [c],
of the quantum Gm^2/c^2, ie $6.67408\times10^{-11}(2.176470\times10^{-8})^2/(2.99792458\times10^8)^2$=**$3.51767225\times10^{-43}$** [d].

One information @
avatar of the duo q^2
defines the geometric sequence
$c^0@ = ml$ $c^1@ = \hbar$ $c^2@ = Gm^2$



Results :

*The coupling constant intrinsic to the information @ is at the center of this knot conforming to the slogan of R.Sorkin : order + number = geometry [6]

*The universe favors the economy of means such as symmetry [7]. If this interlacing was an equivalence relation satisfying the Noether's theorem [8], if it were a Borromean mathematical knot, the nature of its elements would be similar.

*To say that the mass deforms the space-time which is energy (ἐνέργεια, force in action) would be equivalent to saying that the mass is a deformation of space-time.

*On the figure, quanta emerge ; so Gm^2 would be a quantum.

*From metaphor into metonymy, from the stage of the mirror q^2][ml to the identity, there is sliding (movement) of the referent, of signifiers c^0@, c^1@, c^2@ in exponential evolution and of signifieds : particle, action, gravitation.

*An iteration here constructs a geometry from a conceptual object. It must still be perceived as such. Seemingly privileged by its nature, the observer seems intimately related to the singularity QM][GR, as well as that of the couple and ratio time][space. These paradoxes, like $e=mc^2$, seem to echo the constancy imposed by alpha on the attributes of an ontological mirror, principle][image.

References :

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