

Glossary

-pre-quantum particle model: particle' model of T→0K quantum state, based on the classic mechanics applied to quanta and to quantum/sub-quantum fluids;

-quantum wind: flux of quanta of quantum medium with the mass $m_c \geq h \cdot l/c^2$ kg.

-sub-quantum wind: flux of etherons of sub-quantum medium with $m_c < h \cdot l/c^2$ kg.

-chiral pre-quantum model of elementary particle: vortexial model of particle supposing a composite vortex of quantum volume and of magnetic moment.

-intrinsic chirality: absolute size which characterizes the particle' core and the sense of the formed vortex around the fermion' centroid in a homogenous quantum or subquantum wind, by a hypothetical spiral shape of its centroid;

-gravitons: g-etherons, with $m_g = (10^{-68} \div 10^{-72})$ kg, acting as gravitic field quanta and contributing to the gravitomagnetic quantum-vortices forming;

-sinergons: s-etherons, with $m_s = (10^{-59} \div 10^{-61})$ kg, acting mainly as sinergonic quanta of gravitomagnetic vortices but also as quanta of a gravitostatic field;

-quantons: quanta with $m_h = h/c^2 = 7.37 \times 10^{-51}$ Kg; $S_h^* \ll \frac{1}{2}\hbar$, acting as quanta of the **B**-magnetic field and forming the μ_p -magnetic moment of fermion;

-vectons: vectorial photons with $m_v = 3 \times 10^{10} m_h = 2.2 \times 10^{-40}$ kg; $S_v = S_v^* = \frac{1}{2}\hbar$, acting as electrostatic field quanta, resulted as hard-core semiphotons of the cosmic 3K – background radiation;

-**centroid**: super-dense centroid (kernel) of a quanton, photon, electron, etc.;

-**vexons**; vectorial photons with $m_w \geq 10m_e$; $S_w = S_w^* = \frac{1}{2}\hbar$; structured as composite chiral soliton of vectons, acting as constituents of elementary particles quantum volume and of luxons;

-**electrogravitic charge**: the correspondent electrostatic charge of a mass M generating the same force over an electron as the gravitational M -mass;

-**CF-soliton electron**: vortexial model of electron with multi-vortex sub-structure of the quantum volume;

-**scalar radiation quanta**: scalar quanta composed as pairs of two anti-phase pseudo-scalar photons;

-**proto “dark energy”**: fluxonic or vortexial energy of a mixture of etherons and quantons;

-**“dark energy”**: fluxonic or vortexial energy of g – and s – etherons, which determines also the Universe’s expansion;

-**“dark” photons, “dark” particles**: photons /particles formed ‘at cold’, with negligible kinetic energy;

-**atonium**: pseudo-atom having a nucleus and non-quantified electronic orbitals, formed in conditions of metastable dynamic equilibrium;

-**quasielectrons**: bounded degenerate electrons of an N^p -cluster, with fractional charge: $e^* = \frac{2}{3}e$;

-**proto-electron**: electron of $T \rightarrow 0K$, in form of pseudo-cylinder (barrel-like), characterized by the relation: $2\pi a^3 \cdot \rho_a^0 = m_e$, ($l_e = 2a = 2.82\text{fm}$; $\rho_a^0 = 5.17 \text{ kg/m}^3$);

-hydrino: hydrogen atom with the electron on a sub-fundamental level ($n=1/2$);

-dynamideneutron model: model of neutron composed by a proton centre and a negatron revolving around it with the speed $v_e < c$ at a distance $r_e^* \leq a = 1.41 \text{ fm}$;

-σ-gluel: binding gammon, formed as pair of degenerate negatron-positron, maintaining the neutronic electron, having degenerate spin and magnetic moment, around the protonic center;

-zeron: basic neutral constituent with null spin and the mass: $m_0 = 68 m_e$, formed as pair of **quarcin** $c_0^\pm = z^*/2 \cong 34m_e$, with the charge $q^* = \pm^2/3e$;

-quarkons: cluster with odd number of c_0^\pm – quarcins and zeron z^* with even number of paired c-quarcins.

-gravistar: gravitic star formed as a dark energy ball with hard-core, similar to the hypothetical “gravastar”, proposed by E. Mottola and P. O. Mazur but formed “at cold” by primordial “dark energy”;



Dr. Eng. Marius Arghirescu

Through a phenomenological approach using the concept of quantum/sub-quantum fluid, the theory argues the possibility of a cold genesis of elementary particles and of fields, explained with ideal unitary pre-quantum particle' models of simple or composite chiral soliton type, formed at $T \rightarrow 0K$ from confined "dark energy" in a cascade vortex process, according to the ideal fluids mechanics applied to the particle' charge field and quantum/sub-quantum soliton-vortex.

The book is a returning to the classic ideal of physics, because that – according also to Einstein's opinion, a theory in physics is closer to the truth if it has a greater "internal perfection" based on a smaller number of postulates and fundamental concepts. In this sense, the Bohm-Vigier models of quantum mechanics, also the fractalic physical models of matter-space-time are in accordance with the models elaborated by the author M. Arghirescu.

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