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## Observations concerning of speed-depending particles mass increasing

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**Statement of the Problem:** In a recent paper of the author [5], by an electric charge model of static type, with spherical distribution of field quanta and by the Galilean relativity, were re-obtained the Lorentz's expressions of the speed-depending longitudinal and transversal mass of a charged particle accelerated by a quanta flux pressure, as apparent effect generated by a real decreasing of the values of longitudinal and transversal electric field,  $E_L \sim \gamma^{-3}$ ;  $E_T \sim \gamma^{-1}$ , ( $\gamma = 1/\sqrt{1 - v^2/c^2}$ ), and of the magnetic field:  $B \sim \gamma^{-1}$ , which explains the experimental result of the Kaufmann-Bucherer experiments, being re-obtained also the general form of the Doppler-Fizeau effect. It was proposed a classical expression of mass and charge variation, in the form:  $m = m_0/\alpha$ ;  $q = q_0/\alpha$ , ( $\alpha = (1 - v^2/2c^2)$ ), which may results as real variation by a significant density of the quantum vacuum containing etherons ( $m_{g,s} = 10^{-60} \div 10^{-70} \text{kg}$ ) and quantons ( $m_h = h \cdot 1/c^2 = 7.37 \times 10^{-51} \text{kg}$ ), by an relativist etherono-quantonic vortex  $\Gamma_{\mu r}(v)$  which is added to the similar vortex  $\Gamma_{\mu}(v)$  of the particle's magnetic moment- which is increased with the speed if the particle's spin is rectangular to its impulse. The explicative model may explain also the photon's energy in correlation with its electromagnetic properties. In the present paper there are indicated new arguments for the conclusion that the mass of an elementary particle like the electron or the proton cannot increases really until values much higher than the rest-mass of the particle. In the base of the law of matter +energy sum conservation, there are analyzed three hypothetical possibilities of speed-depending mass increasing: a) Classical: The increase of the relativist etherono-quantonic vortex  $\Gamma_r(v)$  generated around the (super)dense centroid(s) of the particle at its passing through the quantum and sub-quantum vacuum; by the (sub)solitons forming condition, which require that the energy of the forming vortex must be at least double than the energy of the formed mass, for the explaining the highest mass of some astroparticles ( $\Gamma_{1020eV}$ ) this mechanism imply the existence of a value of the etherono-quantonic density of the quantum vacuum much higher than the dark energy density, in contradiction with the possibility to receive photons from far galaxies. b) Quantum: The mass increasing by the attraction of already formed neutran bosons, particularly- of „dark photons” and/or Higgs bosons from the polarised quantum vacuum, by hypothetical gluonic quanta; this hypothesis supposes a high probability to meet bosons in the quantum vacuum, in contradiction with the astrophysical observations regarding the receiving of astroparticles with  $\sim 10^{20} \text{eV}$  from far celestial bodies.

**Conclusion:** It is argued that the speed-depending mass variation of the elementary particles cannot be coherently explained in Einsteinian relativist relation, but a model of mass increasing of quasi-stationary baryons or mesons may be considered coherently for special condition, of super-baryonic particle-like clusters forming by the attraction of dark photons and/or Higgs bosons in the nuclear field of the baryonic particle and the confining of the formed super-cluster, (more probable-cold confining).

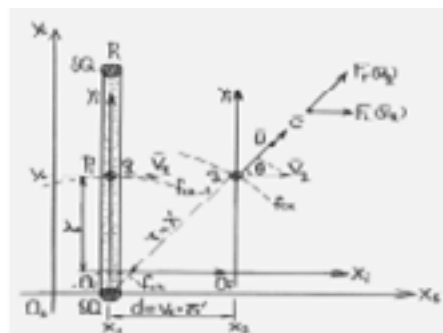


Figure 1: The relativist generation of the accelerating E-field.

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## Recent Publications:

1. M Arghirescu (2018) The nuclear force explaining by a bag model resulted from a vortexial, cold genesis model of nucleon. *Phys. & Astron. Internat. Journ.* 2(4):349–358.
2. M Arghirescu (2018) The explaining of the elementary particles cold genesis by a preonic quasi-crystal model of quarks and a pre-quantum theory of fields. *IJHEP* 5(1):12–22.
3. M Arghirescu (2018) Observations concerning the mass variation in Galilean–type relativity. *International Journal of High Energy Physics IJHEP* 5(1):44–54.
4. M Arghirescu (2018) The possibility of particles forming from a Bose-Einstein condensate, in an intense magnetic or gravitational field. *IJHEP* 5(1):55–62.
5. M Arghirescu (2017) The cold genesis-a new scenario of particles forming. *PAIJ* 1(5):1–5.

## Biography

Marius Arghirescu is an independent scientist in physics and inventor and has a doctorate in science and engineering of materials, from Politechnica University-Bucharest. He works as patent examiner at State Office for Inventions and Trademarks in Romania. He has published three books and more than 30 papers as single author in national and international reviews and has more than 30 patented inventions. He is the author of a cold genesis theory of matter, published in the book: "The Cold Genesis of Matter and Fields" and in some additional papers.

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