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Possible dark matter bosons resulted from a cold genesis theory of particles and a preonic quasi-crystal model of quarks

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The paper is based on a theory developed by author in the book: *The Cold Genesis of Matter and Fields* , which argues the cold genesis of elementary particles in a very strong magnetic field, of a magnetar or a gravistar, in accordance with a resulted quasi-crystalline model of quark and particle- resulted as Bose-Einstein condensate of N gammons, considered as pairs (e^{*+} - e^{*-}) of quasi-electrons with diminished mass m_e^*, charge e*and magnetic moment μ_e^*, whose etherono-quantonic vortex of the magnetic moment: $\mathbf{\Gamma}^*_\mu(r) = \mathbf{\Gamma}A + \mathbf{\Gamma}B$, formed of sinergonic etherons ($m_s \approx 10^{-60}$ kg)- generating the magnetic potential A and of quantons ($m_h = h/c^2 = 7.37x10^{-51}$kg) generating vortex-tubes that materializes the field lines of magnetic induction B, explains the nuclear force as an attraction of the nucleon's impenetrable volume in the field of 2N- superposed vortices $\mathbf{\Gamma}^*_\mu(r)$ of another nucleon. The theory, which predicted the existence of a preon z^0=34 me, experimentally evidenced in 2015 but considered as X- boson of a fifth force, of leptons to quark binding, argues a preonic model of quarks whose stability was explained by a quasi-crystalline model of z^0-preon and of the quark core. In the proposed paper, based on a quasi-crystalline preonic quark model, with hexagonal symmetry, there are identified as possible dark matter constituents some bosons of quantum vacuum with null charge, (quasi)null magnetic moment and with stability comparable to those of particles from the cosmic radiation, resulted by the kernel's crystallinity with hexagonal or triangular symmetry, with masses corresponding to the relations: $M_Z = \Sigma K(n_1.z_\pi + n_2.z_2)$; $M_Z' = \Sigma K(n_1.6z^0+n_2.3z^0)$, with: $z_\pi = 7z^0$; $z_2 = 4z^0$; K = 1⁄7; n_1 = 1⁄4; $n_2 \leq n_1$. It results also some predictions for multi-quark particles of cold genesis such as: 2685.4 m_e tetra-quark; 3063.8 m_e penta-quark; 2720 m_e, 3672.4 m_e hexa-quark; 3329 m_e, 4762.2 m_e hepta-quark.

Biography

Marius Arghirescu has a Doctorate in Science and Engineering of Materials, from Politechnica University of Bucharest and he works as Patent Examiner at State Office for Inventions and Trademarks in Romania. He is a Scientist in Physics and Inventor. He has published three books and more than 25 papers as a single author in national and international reviews and has more than 30 patented invention. 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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