

New Methods in Theoretical Astrophysics

Igor Makarov¹

¹*Haiifa, Israel*

We discovered the following: (1) there are only two fundamental particles virtual electron (electrino) and virtual positron (positrino) their interaction gives birth to virtual positronium characterized by energy virtual positroniums exchange photons and acquire states, called complex positroniums or composiums (2) there exists ether, the primary physical medium, consisting of composiums (3) in ether there takes place spontaneous generation of mesons and neutrons cosmic rays and microwave background are proper radiations of ether experimental data on cosmic rays enabled us to evaluate correlation function of ether and dimensions of some particles mean radius of real electron proved to be about 0.01 fm (4) in respect to ether excitation, neutron is linear system with continuously distributed parameters consistent spatially with ether (5) H-atom is linear system with lumped parameters its structural function is consistent in time with ether H-atom consists of three quarks described by real symmetric matrices agents of their processes correspond to so called gluons (6) essence of nuclear interaction is conservation of energy by alternate transformation of electric energy to magnetic one and vice versa, atom of deuterium (D-atom) being its fundamental case (7) excited by photons, atoms and neutrons respond with neutrinos (8) nuclear structure evolves by shells, D-atom being its basic element there are seven shells: He-shell (2-shell), octahedral shell (8-shell), icosahedral shell (18-shell), double-icosahedral shell (36-shell) and three inverse shells of 18, 8 and 2 D-atoms additional neutrons perform inter-shell interaction electron shells are integral components of nuclear structure (9) every nuclear shell can be modeled by electric LCR-network, so that whole atom can be represented by matrix of impedances atom with atomic number m consists of m D-atoms, is represented by network with m degrees of freedom and, when excited, emits m -neutrinos (10) stellar medium simulates conditions of ether, so that atoms produced in it become different models of ether, achieving their perfection in U-atom its structure being actually realization and exposition of implicit structure of H-atom.