

Abstract Submitted
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Orbital Mass, Charge, and Completeness of the Quantum Nature of Atoms RASULKHOZHA S. SHARAFIDDINOV, Institute of Nuclear Physics, Uzbekistan Academy of Sciences, Ulugbek, Tashkent 100214, Uzbekistan — The atomic system [1] requires one to follow the logic, at the quantum mechanical level, of each component of the naturally united force from the point of view of the interacting objects of an intraatomic behavior. It chooses herewith the sizes of Newton and Coulomb forces between the nucleus and its satellite so that in the presence of the Planck mass and charge $m_{pl} = \left(\frac{\hbar c}{G_N}\right)^{1/2}$, $e_{pl} = (4\pi\epsilon_0\hbar c)^{1/2}$, their explicit values will be connected, on the disclosed quantum basis, with the orbital mass and charge $m_{sl}^o = (b_m^{sl}m_s m_l)^{1/2}$, $e_{sl}^o = (b_{ch}^{sl}e_s e_l)^{1/2}$. The availability of the dimensionless multipliers b_m^{sl} and b_{ch}^{sl} in them implies the existence in a system of any m_{sl}^o and e_{sl}^o at the quantum mechanical level. They define the speed v_{ls} , radius r_{ls} , full orbital energy E_{ls} , and thus directly the period T_{ls} of the revolution of a particle l around the nucleus s in the mass-charge structure [2] dependence of the united gauge invariance of an intraatomic unified force. [1] R.S. Sharafiddinov, Phys. Essays 32, 358 (2019). [2] R.S. Sharafiddinov, Phys. Essays 29, 410 (2016).

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