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R. R. Ahangar* (reza.ahangar@tamuk.edu), P.O. Box 790, Kingsville, TX 78364. *The Geometry of the Complex Matter Space in Relativistic Quantum Mechanics.*

Duality behavior of Photons in wave-particle property have posed challenges and opportunities to discover other frontiers of fundamental particles leading to the relativistic and quantum description of matter. The speed of particles faster than the speed of light could not be recognized, and matter was always described as a real number. A new fundamental view on matter as a complex value has been introduced by many authors who present a paradigm that is shifted from real or pure imaginary particles to Complex Matter Space. A new assumption will be imposed that matter has two intrinsic components, i) mass, and ii) charge. The mass will be measured by real number systems and charge by an imaginary unit. The relativistic concept of Complex Matter Space on energy and momentum is investigated and can conclude that the new Complex Matter Space (CMS) theory will help get one step closer to a better understanding toward, 1) Un-Euclidean description of Minkowski Geometry in the context of the Complex Matter Space, 2) the conversion of mass and energy 3) unifying the forces. Finally, geometrical foundations are essential to have a real picture of space, matter, and the universe. (Received September 20, 2016)