

Abstract Submitted  
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**An extension to Galilean relativity gives rise to quantum mechanics framework** SIMON BERKOVICH<sup>1</sup>, The George Washington University — The presented scheme for quantum mechanics appeared from considering Cellular Automaton Universe in view of the hidden energy associated with the property of inertia [1]. Galilean relativity states that all inertial frames are equivalent. Our consideration reveals one seemingly small exception - the original frame of reference for the material formations of the Cellular Automaton infrastructure is not isotropic. This frame of reference has a distinctive direction as long as elementary particles of matter are generated by cellular automaton relocations. As a result, Cellular Automaton Universe basically complying with the laws of macrophysics for bulk bodies, could exhibit peculiar characteristics for microphysics. Why the states of microobjects are described by complex numbers is obscure. The observables are presented by real numbers through corresponding macro manipulations. In the inertial frame with unidirectional anisotropy isolated particles are characterized by two numbers; magnitude of their velocity and inclination angle to motion direction. So, these quantum states are mapped to a complex Hilbert space with zero vector representing bulk bodies. The effect of spin may be associated with the sign of the inclination angle trending separations for Stern-Gerlach output and Paul Principle. [1] Simon Berkovich, Law of inertia and the primal energy in the cellular automaton universe, Journal of Energy Challenges and Mechanics, vol.2(2015), issue 2, pp. 62-67

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