Abstract Submitted
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On The Origin Of Quantum Diffusion Coefficient And Quantum Potential ASEEM GUPTA[1], None — Synchronizability of space and time experiences between different inhabitants of a spacetime is abstracted as a fundamental premise of Classical physics. Absence thereof i.e. desynchronization between space and time experiences of a system under study and the observer is then studied for a single dimension single particle system. Desynchronization fundamentally makes probability concepts enter physics ab-initio and not as secondary tools to deal with situations wherein incomplete information in situation following perfectly deterministic dynamics demands its introduction. Desynchronization model based on Poisson distribution of events vis-à-vis an observer, leads to expectation of particle's motion as a Brownian motion deriving Nelson's quantum diffusion coefficient naturally, without needing to postulate it. This model also incorporates physical effects akin to those of Bohm's Quantum Potential, again without needing any sub-quantum medium. Schrodinger's equation is shown to be derivable incorporating desynchronization only of space while Quantum Field Theory is shown to model desynchronization of time as well. Fundamental suggestion of the study is that it is desynchronization that is at the root of quantum phenomena rather than sub-micro scales of spacetime.

[1]Absence of possibility of synchronization between system's space and time and those of observer is studied. Mathematical modeling of desynchronized evolution explains some intriguing aspects of Quantum Mechanical theory.

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None

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