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### **Emergent Quantum Mechanics without wave functions**

We present our model of Emergent Quantum Mechanics which can be characterized by “realism without pre-determination”. This is illustrated by our analytic description and corresponding computer simulations of Bohmian-like “surreal” trajectories, which are obtained classically, i.e., without the use of any quantum mechanical tool such as wave functions. However, these trajectories do not necessarily represent ontological paths of particles but rather mappings of the probability density flux in a hydrodynamical sense. Modeling emergent quantum mechanics in a high-low intensity double slit scenario gives rise to the “quantum sweeper effect” with a characteristic intensity pattern. This phenomenon should be experimentally testable via weak measurement techniques.

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