

What quantum mechanics describes is discontinuous motion of particles

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Abstract

We present a theory of discontinuous motion of particles in continuous space-time. We show that the simplest nonrelativistic evolution equation of such motion is just the Schroedinger equation in quantum mechanics. This strongly implies what quantum mechanics describes is discontinuous motion of particles. Considering the fact that space-time may be essentially discrete when considering gravity, we further present a theory of discontinuous motion of particles in discrete space-time. We show that its evolution will naturally result in the dynamical collapse process of the wave function, and this collapse will bring about the appearance of continuous motion of objects in the macroscopic world.

Keywords: interpretation of quantum mechanics,discontinuous motion,dynamical collapse,discrete space-time,Planck energy

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