

Quantum Entanglement by Robert Fuentes

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Quantum mechanics, also known as quantum physics, is a field which developed in the early 20th century based on work of scientists working in the late 19th century. Contrary to the physics of the day, classical physics, which was developed to reveal the workings of the phenomenon of events on the surface of our planet and in outer space, quantum mechanics focuses on the realm of atomic and subatomic reality.

The detached observer of classical physics morphed into an observer whose very observation modified the particles being studied. As Heisenberg's Uncertainty Principle shows, on an atomic level, the act of measurement will result in only the discovery of the location of the particle or its momentum but not both, since the act of measurement will alter one of those qualities.

Fundamental to quantum mechanics is the discovery of the dual nature of particles on the atomic scale and smaller. When electrons are fired at a double slit they behave as if they are waves and result in a pattern formed of particles on a screen behind the double slit. That pattern is consistent with an interference pattern that is seen commonly in fluids that are perturbed.

Quantum entanglement begins with the modification of two particles whose paths cross resulting in a mixing of each particle's waveform. As the particles separate to go on their own way, the hybrid waveform each acquires is identical. The entanglement manifests when subsequent actions to one of the particles also modifies the other no matter what the spatial relationship is between the two particles.

May 3, 2021