

Entanglement Exchange and Bohmian Mechanics

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Abstract

This paper analyses the phenomenon of entanglement exchange in Bohm's pilot wave interpretation of quantum mechanics. The interesting feature of the phenomenon is that systems become entangled without causal interaction; hence it is a useful situation for investigating the unique nature of interaction in Bohmian mechanics. The first two sections introduce, respectively, entanglement exchange in the standard interpretation of quantum mechanics, and the basic principles of Bohmian mechanics. The next section shows that the Bohmian interpretation makes the same experimental predictions about entanglement exchange as the standard one. The final section draws some conclusions about interactions and entanglement in Bohmian mechanics.

Keywords: Quantum, Bohm, Entanglement, causation

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