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Quantum Physics Without Quantum Philosophy

It has often been claimed that without drastic conceptual innovations a genuine explanation of quantum interference effects and quantum randomness is impossible. This book concerns Bohmian mechanics, a simple particle theory that is a counterexample to such claims. The gentle yet comprehensive introduction provided here, together with updated versions of the authors' seminal papers, show how the phenomena of non-relativistic quantum mechanics, from Heisenberg's uncertainty principle to non-commuting observables, emerge from the Bohmian motion of particles, the natural particle motion associated with Schrödinger's equation. This book will be of value to all students and researchers in physics with an interest in the meaning of quantum theory as well as to philosophers of science.

ISBN 978-3-642-30689-1



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