1. Record Nr. UNINA9910484896603321

Autore	Sontz Stephen Bruce
Titolo	An Introductory Path to Quantum Theory : Using Mathematics to Understand the Ideas of Physics / / by Stephen Bruce Sontz
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-40767-5
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XXV, 286 p. 1 illus.)
Disciplina	530.15 530.12
Soggetti	Mathematical physics Quantum physics Mathematical Physics Quantum Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction to this Path -- Viewpoint -- Neither Particle nor Wave -- Schrödinger's Equation -- Operators and Canonical Quantization -- The Harmonic Oscillator -- Interpreting: Mathematics -- Interpreting: Physics -- The Language of Hilbert Space -- Interpreting: Measurement -- The Hydrogen Atom -- Angular Momentum -- The Rotation Group SO(3) -- Spin and SU(2) -- Bosons and Fermions -- Classical and Quantum Probability -- The Heisenberg Picture -- Uncertainty (Optional) -- Speaking of Quantum Theory (Optional) -- Complementarity (Optional) -- Axioms (Optional) -- And Gravity? -- Measure Theory: A Crash Course.
Sommario/riassunto	Since the 17th century, physical theories have been expressed in the language of mathematical equations. This introduction to quantum theory uses that language to enable the reader to comprehend the notoriously non-intuitive ideas of quantum physics. The mathematical knowledge needed for using this book comes from standard undergraduate mathematics courses and is described in detail in the section Prerequisites. This text is especially aimed at advanced undergraduate and graduate students of mathematics, computer

science, engineering and chemistry among other disciplines, provided they have the math background even though lacking preparation in physics. In fact, no previous formal study of physics is assumed.