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Abstract

This book consists of seven chapters. Introduction to Electromagnetism and Quantum Mechanics are included and then Gauge Transformations are examined. The Gauge Transformations have been a research tool in the sense that the request that the Schroedinger is invariant under those transformations leads to the introduction of interactions, e.g. electromagnetic. Chapter 1 is an introduction to electromagnetic fields and potentials. Chapter 2 is referred to Lagrange and Hamilton equations for charged particles inside an external electromagnetic field. Chapter 3 is referred to operators in quantum mechanics. Chapter 4 introduces the average values of the quantum quantities. Chapter 5 studies the time evolution of the average values. Chapter 6 describes the Ehrenfest theorem. Finally, chapter 7 is referred to the Aharonov-Bohm effect.

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