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Soggetti	Elementary particles (Physics) Quantum field theory Quantum electrodynamics Mathematical physics Computer simulation Quantum physics Elementary Particles, Quantum Field Theory Quantum Electrodynamics, Relativistic and Many-body Calculations Computational Physics and Simulations Quantum Simulations
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Nota di contenuto	1. Prologue -- 2. Many particle physics as a quantum eld theory -- 3. Degenerate Fermi and Bose gases -- 4. The action principle and Noether’s theorem -- 5. Non-relativistic space-time symmetries -- 6. Space-time symmetry and relativistic eld theory -- 7. The real scalar quantum eld theory -- 8. Emergent relativistic symmetry -- 9. The Dirac eld theory -- 10. Photons.
Sommario/riassunto	This textbook is intended to be used in an introductory course in quantum field theory. It assumes the standard undergraduate education of a physics major and it is designed to appeal to a wide array of physics graduate students, from those studying theoretical and experimental high energy physics to those interested in condensed matter, optical, atomic, nuclear and astrophysicists. It includes a thorough development of the field theoretic approach to nonrelativistic many-body physics as a step in developing a broad-based working

knowledge of some of the basic aspects of quantum field theory. It presents a logical, step by step systematic development of relativistic field theory and of functional techniques and their applications to perturbation theory with Feynman diagrams, renormalization, and basic computations in quantum electrodynamics. .