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	Autore	Salasnich Luca
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	Sommario/riassunto	This textbook offers an introduction to statistical mechanics, special relativity, and quantum physics, developed from lecture notes for the "Quantum Physics" course at the University of Padua. Beginning with a brief review of classical statistical mechanics in the first chapter, the

book explores special and general relativity in the second chapter. The third chapter delves into the historical analysis of light quantization, while the fourth chapter discusses Niels Bohr's quantization of energy levels and electromagnetic transitions. The Schrödinger equation is investigated in the fifth chapter. Chapter Six covers applications of quantum mechanics, including the quantum particle in a box, quantum particle in harmonic potential, quantum tunneling, stationary perturbation theory, and time-dependent perturbation theory. Chapter Seven outlines the basic axioms of quantum mechanics. Chapter Eight focuses on quantum atomic physics, emphasizing electron spin and utilizing the Dirac equation for theoretical justification. The ninth chapter explains quantum mechanics principles for identical particles at zero temperature, while Chapter Ten extends the discussion to quantum particles at finite temperature. Chapter Eleven provides insights into quantum information and entanglement, and the twelfth chapter explains the path integral approach to quantum mechanics. The Authors Luca Salasnich was awarded an M.Sc. in Physics by the University of Padua in 1991, and his Ph.D. in Theoretical Physics by the University of Florence in 1995. He is a full professor of Theoretical Physics at the University of Padua. His fields of research are condensed matter and statistical physics. Francesco Lorenzi was awarded a B.Sc. in Information Engineering by the University of Padua in 2020, and an M. Sc. in ICT and Photonics Engineering by the same University in 2022. He is now a Ph.D. fellow in Physics at the University of Padua, Italy. His fields of research are nonlinear optical fibers, ultracold atoms, and scattering theory. .