1. Record Nr. UNINA9910464940003321

Titolo	Caught at sea : forced labour and trafficking in fisheries
Pubbl/distr/stampa	Geneva : , : International Labour Office, Sectoral Activities Department, , 2013
ISBN	92-2-127567-1
Descrizione fisica	1 online resource (100 pages)
Soggetti	Forced labor Human trafficking Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references.

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Autore	Nazarov Yuli V.
Titolo	Advanced quantum mechanics : A practical guide / / Yuli V Nazarov, Delft University of Technology, Jeroen Danon, Free University of Berlin [[electronic resource]]
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2013
ISBN	1-107-23317-8 1-139-60972-6 1-107-25353-5 1-139-61158-5 1-139-62088-6 1-283-97025-2 1-139-62460-1 1-139-61530-0 0-511-98042-6
Descrizione fisica	1 online resource (xiv, 354 pages) : digital, PDF file(s)
Classificazione	SCI057000
Disciplina	530.12
Soggetti	Quantum theory
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Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di contenuto	Cover; Contents; Figure Credits; Preface; PART I SECOND QUANTIZATION; 1 Elementary quantum mechanics; 1.1 Classical mechanics; 1.2 Schrodinger equation; 1.3 Dirac formulation; 1.4 Schrodinger and Heisenberg pictures; 1.5 Perturbation theory; 1.6 Time-dependent perturbation theory; 1.6.1 Fermi's golden rule; 1.7 Spin and angular momentum; 1.7.1 Spin in a magnetic field; 1.7.2 Two spins; 1.8 Two-level system: The qubit; 1.9 Harmonic oscillator; 1.10 The density matrix; 1.11 Entanglement; Exercises; Solutions; 2 Identical particles; 2.1 Schrodinger equation for identical particles 2.2 The symmetry postulate2.2.1 Quantum fields; 2.3 Solutions of the N-particle Schrodinger equation; 2.3.1 Symmetric wave function: Bosons; 2.3.2 Antisymmetric wave function: Fermions; 2.3.3 Fock space; Exercises; Solutions; 3 Second quantization; 3.1 Second quantization for bosons; 3.1.1 Commutation relations; 3.1.2 The

structure of Fock space; 3.2 Field operators for bosons; 3.2.1 Operators in terms of field operators; 3.2.2 Hamiltonian in terms of field operators; 3.2.3 Field operators in the Heisenberg picture; 3.3 Why second quantization?; 3.4 Second quantization for fermions
3.4.1 Creation and annihilation operators for fermions3.4.2 Field operators; 3.5 Summary of second quantization; Exercises; Solutions; PART II EXAMPLES; 4 Magnetism; 4.1 Non-interacting Fermi gas; 4.2 Magnetic ground state; 4.2.1 Trial wave function; 4.3 Energy; 4.3.1 Kinetic energy; 4.3.2 Potential energy; 4.3.3 Energy balance and phases; 4.4 Broken symmetry; 4.5 Excitations in ferromagnetic metals; 4.5.1 Single-particle excitations; 4.5.2 Electron-hole pairs; 4.5.3 Magnons; 4.5.4 Magnon spectrum; Exercises; Solutions; 5 Superconductivity; 5.1 Attractive interaction and Cooper pairs
5.1.1 Trial wave function5.1.2 Nambu boxes; 5.2 Energy; 5.2.1 Energy minimization; 5.3 Particles and quasiparticles; 5.4 Broken symmetry; Exercises; Solutions; 6 Superfluidity; 6.1 Non-interacting Bose gas; 6.2 Field theory for interacting Bose gas; 6.2.1 Hamiltonian and Heisenberg equation; 6.3 The condensate; 6.3.1 Broken symmetry; 6.4 Excitations as oscillations; 6.4.1 Particles and quasiparticles; 6.5 Topological excitations; 6.5.1 Vortices; 6.5.2 Vortices as quantum states; 6.5.3 Vortex lines; Exercises; Solutions; PART III FIELDS AND RADIATION; 7 Classical fields
7.1 Chain of coupled oscillators7.2 Continuous elastic string; 7.2.1 Hamiltonian and equation of motion; 7.2.2 Solution of the equation of motion; 7.2.3 The elastic string as a set of oscillators; 7.3 Classical electromagnetic field; 7.3.1 Maxwell equations; 7.3.2 Useful relations; 7.3.3 Vector and scalar potentials; 7.3.4 Gauges; 7.3.5 Electromagnetic field as a set of oscillators; 7.3.6 The LC-oscillator; Exercises; Solutions; 8 Quantization of fields; 8.1 Quantization of the mechanical oscillator; 8.1.1 Oscillator and oscillators; 8.2 The elastic string: phonons
8.3 Fluctuations of magnetization: magnons

Sommario/riassunto

An accessible introduction to advanced quantum theory, this graduate-level textbook focuses on its practical applications rather than mathematical technicalities. It treats real-life examples, from topics ranging from quantum transport to nanotechnology, to equip students with a toolbox of theoretical techniques. Beginning with second quantization, the authors illustrate its use with different condensed matter physics examples. They then explain how to quantize classical fields, with a focus on the electromagnetic field, taking students from Maxwell's equations to photons, coherent states and absorption and emission of photons. Following this is a unique master-level presentation on dissipative quantum mechanics, before the textbook concludes with a short introduction to relativistic quantum mechanics, covering the Dirac equation and a relativistic second quantization formalism. The textbook includes 70 end-of-chapter problems. Solutions to some problems are given at the end of the chapter and full solutions to all problems are available for instructors at www.cambridge.org/9780521761505.