
Problems In Quantum Mechanics Dover Books On Physics

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GARDNER DAUGHERTY

Linear Operators for Quantum Mechanics Courier Corporation

Suitable for advanced undergraduates and graduate students, this compact treatment examines linear space, functionals, and operators; diagonalizing operators; operator algebras; and equations of motion. 1969 edition.

with Solutions World Scientific Publishing Company

This challenging book contains a comprehensive collection of problems in nonrelativistic quantum mechanics of varying degrees of difficulty. It features answers and completely worked-out solutions to each problem. Geared toward advanced undergraduates and graduate students, it provides an ideal adjunct to any textbook in quantum mechanics. 1961 edition.

Introduction to Quantum Mechanics Courier Dover Publications

A comprehensive collection of problems of varying degrees of difficulty in nonrelativistic quantum mechanics, with answers and completely worked-out solutions. An ideal adjunct to any textbook in quantum mechanics.

Modern Quantum Chemistry Courier Corporation

This graduate-level text explains the modern in-depth approaches to the calculation of electronic structure and the properties of molecules. Largely self-contained, it features more than 150 exercises. 1989 edition.

Problems in Quantum Mechanics Courier Corporation

Graduate-level text develops group theory relevant to physics and chemistry and illustrates their applications to quantum mechanics, with systematic treatment of quantum theory of atoms, molecules, solids. 1964 edition.

Problems in Quantum Mechanics Courier Corporation

Changes and additions to the new edition of this classic textbook include a new chapter on symmetries, new problems and examples, improved explanations, more numerical problems to be worked on a computer, new applications to solid state physics, and consolidated treatment of time-dependent potentials.

Solution of Certain Problems in Quantum Mechanics Courier Corporation

Subjects include formalism and its interpretation, analysis of simple systems, symmetries and invariance, methods of approximation, elements of relativistic quantum mechanics, much more.

"Strongly recommended." -- "American Journal of Physics."

Quantum Mechanics in Simple Matrix Form Courier Corporation

A series of seminal technological revolutions has led to a new generation of electronic devices miniaturized to such tiny scales where the strange laws of quantum physics come into play. There is no doubt that, unlike scientists and engineers of the past, technology leaders of the future will have to rely on quantum mechanics in their everyday work. This makes teaching and learning the subject of paramount importance for further progress. Mastering quantum physics is a very non-trivial task and its deep understanding can only be achieved through working out real-life problems and examples. It is notoriously difficult to come up with new quantum-mechanical problems that would be solvable with a pencil and paper, and within a finite amount of time. This book remarkably presents some 700+ original problems in quantum mechanics together with detailed solutions covering nearly 1000 pages on all aspects of quantum science. The material is largely new to the English-speaking audience. The problems have been collected over about 60 years, first by the lead author, the late Prof. Victor Galitski, Sr. Over the years, new problems were added and the material polished by Prof. Boris Karnakov. Finally, Prof. Victor Galitski, Jr., has extended the material with new problems particularly relevant to modern science.

Quantum Mechanics for Applied Physics and Engineering OUP Oxford

Intended for advanced undergraduates and graduate students in mathematics, physics, and chemistry, this concise treatment demonstrates the theory of special functions' use and application to problems in atomic and molecular physics. 2017 edition.

Problems in Quantum Mechanics Courier Corporation

A comprehensive collection of problems of varying degrees of difficulty in nonrelativistic quantum mechanics, with answers and completely worked-out solutions. An ideal adjunct to any textbook in quantum mechanics.

Quantum Mechanics Courier Corporation

Written by a pair of distinguished Soviet mathematicians, this compilation presents 160 lucidly expressed problems in nonrelativistic quantum mechanics plus completely worked-out solutions. Some were drawn from the authors' courses at the Moscow Institute of Engineering, but most were prepared especially for this book. A high-level supplement rather than a primary text, it constitutes a masterful complement to advanced undergraduate and graduate texts and courses in quantum mechanics. The mathematics employed in the proofs of the problems—asymptotic expansions of functions, Green's functions, use of different representation spaces, and simple limiting cases—are

detailed and comprehensive. Virtually no space is devoted to the physical statements underlying the problems, since this is usually covered in books on quantum mechanics. Teachers and students will find this volume particularly valuable in terms of its advanced mathematics and detailed presentations, its coverage of scattering theory, and its helpful graphs and explanatory figures.

With Solutions Courier Corporation

International Series in Natural Philosophy, Volume 30: Problems in Quantum Mechanics focuses on the processes, principles, reactions, and methodologies involved in quantum mechanics. The publication first elaborates on the mathematical formalism of quantum mechanics, simple quantum systems, and mean values and uncertainty relations. Discussions focus on mean values of dynamical variables, uncertainty relations, eigenfunctions and the energy spectrum, motion in a central field, matrix representation of vectors and operators, Hilbert spaces, and operators in Hilbert space. The text then takes a look at mean values and uncertainty relations, semi-classical approximation, and pictures and representations. The book takes a look at orbital angular momentum and spin, systems of identical particles, and perturbation theory. Topics include variational method, stationary state perturbation theory, isotopic spin, second quantization, properties of angular momentum operators, and angular momentum and rotations of coordinate axes. The manuscript also ponders on functions used in quantum mechanics, relativistic quantum mechanics, and radiation theory. The publication is a dependable reference for researchers interested in quantum mechanics.

A Guide to Feynman Diagrams in the Many-Body Problem Courier Corporation

Focusing on the principles of quantum mechanics, this text for upper-level undergraduates and graduate students introduces and resolves special physical problems with more than 100 exercises. 1967 edition.

Lectures on Quantum Mechanics Courier Dover Publications

"This volume serves as a text for advanced undergraduates and graduate students of physics as well as a reference for professionals. Clear in its presentation and scrupulous in its attention to detail, the treatment originally appeared in a two-volume French edition."--Back cover.

Topics in Advanced Quantum Mechanics Courier Corporation

This graduate-level text is based on a course in advanced quantum mechanics, taught many times at the University of Massachusetts, Amherst. Topics include propagator methods, scattering theory, charged particle interactions, alternate approximate methods, and Klein-Gordon and Dirac equations. Problems appear in the flow of the discussion, rather than at the end of chapters. 1992 edition.

Quantum Mechanics Courier Dover Publications

Introductory text for graduate students in physics taking a year-long course in quantum mechanics

in which the third quarter is devoted to relativistic wave equations and field theory. Answers to selected problems. 1972 edition.

The Many-Body Problem in Quantum Mechanics Courier Dover Publications

Superb introduction for nonspecialists covers Feynman diagrams, quasi particles, Fermi systems at finite temperature, superconductivity, vacuum amplitude, Dyson's equation, ladder approximation, and more. "A great delight." — Physics Today. 1974 edition.

Exploring Quantum Mechanics Courier Corporation

Many students find quantum mechanics conceptually difficult when they first encounter the subject. In this book, the postulates and key applications of quantum mechanics are well illustrated by means of a carefully chosen set of problems, complete with detailed, step-by-step solutions. Beginning with a chapter on orders of magnitude, a variety of topics are then covered, including the mathematical foundations of quantum mechanics, Schrödinger's equation, angular momentum, the hydrogen atom, the harmonic oscillator, spin, time-independent and time-dependent perturbation theory, the variational method, multielectron atoms, transitions and scattering. Throughout, the physical interpretation or application of certain results is highlighted, thereby providing useful insights into a wide range of systems and phenomena. This approach will make the book invaluable to anyone taking an undergraduate course in quantum mechanics.

Quantum Mechanics Courier Dover Publications

Unusually varied problems, with detailed solutions, cover quantum mechanics, wave mechanics, angular momentum, molecular spectroscopy, scattering theory, more. 280 problems, plus 139 supplementary exercises.

Problems in Quantum Mechanics Courier Corporation

This second edition of an extremely well-received book presents more than 250 nonrelativistic quantum mechanics problems of varying difficulty with the aim of providing students didactic material of proven value, allowing them to test their comprehension and mastery of each subject. The coverage is extremely broad, from themes related to the crisis of classical physics through achievements within the framework of modern atomic physics to lively debated, intriguing aspects relating to, for example, the EPR paradox, the Aharonov-Bohm effect, and quantum teleportation. Compared with the first edition, a variety of improvements have been made and additional topics of interest included, especially focusing on elementary potential scattering. The problems themselves range from standard and straightforward ones to those that are complex but can be considered essential because they address questions of outstanding importance or aspects typically overlooked in primers. The book offers students both an excellent tool for independent learning and a ready-reference guide they can return to later in their careers.