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Autore	Zamastil Jaroslav
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Descrizione fisica	1 online resource (XXVI, 464 p. 48 illus.)
Disciplina	530.12
Soggetti	Quantum physics Atomic structure Molecular structure Physics Low temperature physics Low temperatures Spectroscopy Microscopy Quantum Physics Atomic/Molecular Structure and Spectra Mathematical Methods in Physics Low Temperature Physics Spectroscopy and Microscopy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Preface -- Acknowledgments -- Notation, Convention, Units, and Experimental Data -- List of Exercises.-1 Foundations of Quantum Mechanics -- 2 Approximate Methods in Quantum Mechanics -- 3 Hydrogen Atom Structure and its Spectral Lines -- 4 Treasures Hidden in Commutators -- 5 The Helium Atom -- 6 Dynamics: The Non-Relativistic Theory -- 7 Dynamics: The Relativistic Theory -- Afterword -- Appendix -- Index.
Sommario/riassunto	This book highlights the power and elegance of algebraic methods of solving problems in quantum mechanics. It shows that symmetries not

only provide elegant solutions to problems that can be solved exactly, but also substantially simplify problems that must be solved approximately. Furthermore, the book provides an elementary exposition of quantum electrodynamics and its application to low-energy physics, along with a thorough analysis of the role of relativistic, magnetic, and quantum electrodynamic effects in atomic spectroscopy. Included are essential derivations made clear through detailed, transparent calculations. The book's commitment to deriving advanced results with elementary techniques, as well as its inclusion of exercises will enamor it to advanced undergraduate and graduate students.
