1. Record Nr. UNINA9910437983303321

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Titolo	WKB Approximation in Atomic Physics / / by Boris Mikhailovich Karnakov, Vladimir Pavlovich Krainov
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2013
ISBN	3-642-31558-5
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (179 p.)
Disciplina	530.15
Soggetti	Physics Atoms Mathematical physics Quantum theory Mathematical Methods in Physics Atomic, Molecular, Optical and Plasma Physics Mathematical Applications in the Physical Sciences Quantum Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	WKB-Approximation in Quantum Mechanics -- One-Dimensional Motion -- WKB-Approximation for a Particle in Central Field -- Langer Transformation -- 1/N-Expansion in Quantum Mechanics -- 1/N Expansion for Energy Levels of Binding States -- Wave Functions of 1/n-Expansion -- Rydberg States of Atomic Systems -- Unperturbed Rydberg States of Atoms -- Interaction between a Rydberg Electron and an Electromagnetic Radiation -- Penetrability of Potential Barriers and Quasistationary States -- Quasi-Stationary States of One-Dimensional Systems -- Quasi-Stationary States and Above-Barrier Reflection -- Transitions and Ionization in Quantum Systems -- Adiabatic Transitions -- Ionization of Quantum Systems.
Sommario/riassunto	This book has evolved from lectures devoted to applications of the Wentzel - Kramers – Brillouin- (WKB or quasi-classical) approximation and of the method of 1/N expansion for solving various problems in atomic and nuclear physics. The intent of this book is to help students

and investigators in this field to extend their knowledge of these important calculation methods in quantum mechanics. Much material is contained herein that is not to be found elsewhere. WKB approximation, while constituting a fundamental area in atomic physics, has not been the focus of many books. A novel method has been adopted for the presentation of the subject matter, the material is presented as a succession of problems, followed by a detailed way of solving them. The methods introduced are then used to calculate Rydberg states in atomic systems and to evaluate potential barriers and quasistationary states. Finally, adiabatic transition and ionization of quantum systems are covered.