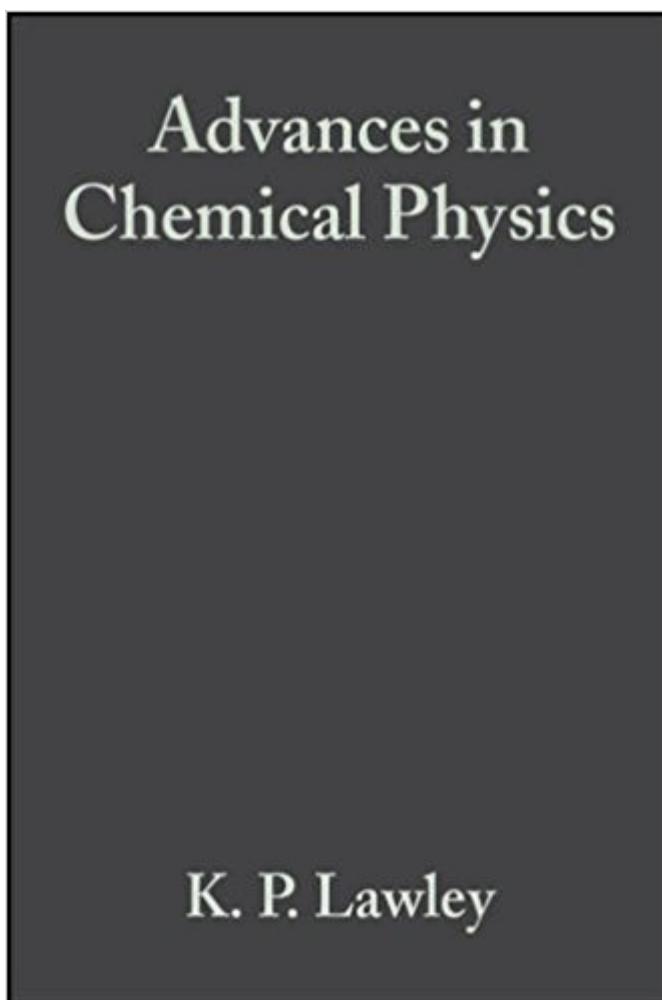


The book was found

# **AB INITIO Methods In Quantum Chemistry 2 (Advances In Chemical Physics) (Vol 67)**



## Synopsis

The Advances in Chemical Physics series provides the chemical physics and physical chemistry fields with a forum for critical, authoritative evaluations of advances in every area of the discipline. Filled with cutting-edge research reported in a cohesive manner not found elsewhere in the literature, each volume of the Advances in Chemical Physics series serves as the perfect supplement to any advanced graduate class devoted to the study of chemical physics.

## Book Information

Series: Advances in Chemical Physics (Book 69)

Hardcover: 598 pages

Publisher: Wiley-Interscience; 1 edition (May 20, 1987)

Language: English

ISBN-10: 0471909017

ISBN-13: 978-0471909019

Product Dimensions: 6.3 x 1.4 x 9.3 inches

Shipping Weight: 2.2 pounds

Average Customer Review: 4.2 out of 5 stars 2 customer reviews

Best Sellers Rank: #5,384,499 in Books (See Top 100 in Books) #73 in Books > Science & Math > Chemistry > Chemical Physics #278 in Books > Science & Math > Chemistry > Physical & Theoretical > Quantum Chemistry #11109 in Books > Science & Math > Chemistry > General & Reference

## Customer Reviews

This book is essentially a textbook on MCSCF theory, and a very good one at that. Werner, Shephard and Roos all write about their particular area of MCSCF theory: Werner on direct CI methods, Shepard a 198 page summary of everything one might need to know, from theory to optimal Fortran loops, and Roos on CASSCF. The section by Pulay on analytic derivatives is excellent as well, while the rest of the book is quite dated (Xa DFT, "modern VB theory", and the two applications chapters are not worth reading. Finally, the chapter on propagators by Oddershede is not bad at all; unfortunately those methods have gone out of favor in the general community, although good work using these methods still comes out of the Gainesville-Uppsala school. More recent articles can be found in the "Advances in Quantum Chemistry" series, particularly the recent one in honor of Ohrn and Lindenberg. Because of the absence of an authoritative book on MCSCF theory, this is one of the few books in this series worth actually buying, since more than half of the

book is worth photocopying. I disagree with the other reviewer's characterization that this is for the physics-minded. This is a book for serious quantum chemists who own or internalized Helgaker-Olsen-Jorgensen's masterpiece, "Molecular Electronic Structure Theory". If you're not fluent at that level, do not bother with this book. This series is meant for experts (see the first few pages).

There have been a few good books covering the basic molecular orbital theory but they offer very little information on how one should deal with structures beyond ground state closed-shell systems. Such problems are commonly known as closed-shell HF-type problems and are only a small fraction of the issues in the electronic structure theory. It is impossible to go through graduate school let alone publish papers and win grants with just the HF-type capabilities and one's minimal knowledge today should really include a good grasp on the multiconfigurational theories. It is a vast and deep field like others and a compact yet efficient review is very rare indeed. This review should serve as an effective guide to elevate oneself above the closed-shell HF theory, provided that he has acquired sufficient knowledge on the textbook molecular orbital theory and basic linear algebra. Experimental chemists will probably find the material a little indigestible. Recommended for more physics-oriented readers who are prepared to spend time on other references quoted therein, as it is not a self-contained introduction on the multiconfigurational SCF theory.

[Download to continue reading...](#)

AB INITIO Methods in Quantum Chemistry 2 (Advances in Chemical Physics) (Vol 67) Ab Initio Methods in Quantum Chemistry, Part 1 (Advances in Chemical Physics) Recent Advances in the Theory of Chemical and Physical Systems: Proceedings of the 9th European Workshop on Quantum Systems in Chemistry and Physics ... in Theoretical Chemistry and Physics) Advanced Molecular Quantum Mechanics: An Introduction to Relativistic Quantum Mechanics and the Quantum Theory of Radiation (Studies in Chemical Physics) Advances in Chemical Physics, Volume 15: Stochastic Processes in Chemical Physics (v. 15) Computational Materials Science: From Ab Initio to Monte Carlo Methods (Springer Series in Solid-State Sciences) Physical Chemistry of Polyelectrolyte Solutions (Advances in Chemical Physics) Principles of Quantum Mechanics: As Applied to Chemistry and Chemical Physics Methods of Quantum Field Theory in Statistical Physics (Dover Books on Physics) Quantum Electrodynamics: Gribov Lectures on Theoretical Physics (Cambridge Monographs on Particle Physics, Nuclear Physics and Cosmology) For Ilya Prigogine (Advances in Chemical Physics, Vol. 38) Problems and Solutions in Quantum Chemistry and Physics (Dover Books on Chemistry) Introduction to magnetic resonance with

applications to chemistry and chemical physics (Harper's chemistry series) The Feynman Lectures on Physics, Vol. III: The New Millennium Edition: Quantum Mechanics: Volume 3 (Feynman Lectures on Physics (Paperback)) Quantum Runes: How to Create Your Perfect Reality Using Quantum Physics and Teutonic Rune Magic (Creating Magick with The Universal Laws of Attraction Book 1) Quantum Thermodynamics: Emergence of Thermodynamic Behavior Within Composite Quantum Systems (Lecture Notes in Physics) Covariant Loop Quantum Gravity: An Elementary Introduction to Quantum Gravity and Spinfoam Theory (Cambridge Monographs on Mathematical Physics) The Quantum Mechanics Solver: How to Apply Quantum Theory to Modern Physics Advances In Chemical Physics Volume 33 (v. 33) Electron Transfer: From Isolated Molecules to Biomolecules, Part 2 (Advances in Chemical Physics)

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)