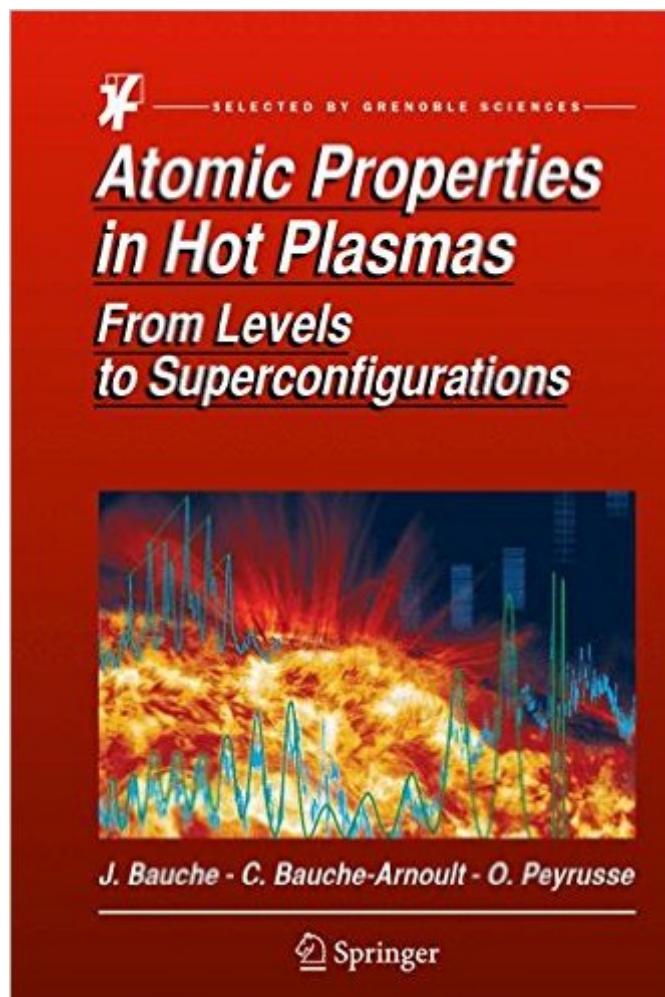


The book was found

# Atomic Properties In Hot Plasmas: From Levels To Superconfigurations



## Synopsis

This book is devoted to the calculation of hot-plasma properties which generally requires a huge number of atomic data. It is the first book that combines information on the details of the basic atomic physics and its application to atomic spectroscopy with the use of the relevant statistical approaches. Information like energy levels, radiative rates, collisional and radiative cross-sections, etc., must be included in equilibrium or non-equilibrium models in order to describe both the atomic-population kinetics and the radiative properties. From the very large number of levels and transitions involved in complex ions, some statistical (global) properties emerge. The book presents a coherent set of concepts and compact formulas suitable for tractable and accurate calculations. The topics addressed are: radiative emission and absorption, and a dozen of other collisional and radiative processes; transition arrays between level ensembles (configurations, superconfigurations); effective temperatures of configurations, superconfigurations, and ions; charge-state distributions; radiative power losses and opacity. There are many numerical examples and comparisons with experiment presented throughout the book. The plasma properties described in this book are especially relevant to large nuclear fusion facilities such as the NIF (California) and the ITER (France), and to astrophysics. Methods relevant to the central-field configurational model are described in detail in the appendices: tensor-operator techniques, second-quantization formalism, statistical distribution moments, and the algebra of partition functions. Some extra tools are propensity laws, correlations, and fractals. These methods are applied to the analytical derivation of many properties, specially the global ones, through which the complexity is much reduced. The book is intended for graduate-level students, and for physicists working in the field.

## Book Information

Hardcover: 379 pages

Publisher: Springer; 1st ed. 2015 edition (August 5, 2015)

Language: English

ISBN-10: 3319181467

ISBN-13: 978-3319181462

Product Dimensions: 6.1 x 0.9 x 9.2 inches

Shipping Weight: 1.6 pounds (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #1,052,431 in Books (See Top 100 in Books) #155 in Books > Engineering & Transportation > Engineering > Energy Production & Extraction > Nuclear #602 in Books >

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

Atomic Properties in Hot Plasmas: From Levels to Superconfigurations The Book on Managing Rental Properties: A Proven System for Finding, Screening, and Managing Tenants With Fewer Headaches and Maximum Profit How to Quit Your Job with Rental Properties: A Step-by-Step Guide to UNLOCKING Passive Income by Investing in Real Estate The Beginner's Guide to Medicinal Plants: Everything You Need to Know About the Healing Properties of Plants & Herbs, How to Grow and Harvest Them A Fistful Of Properties: This book was written to help other property managers and brokers live a comfortable balanced life. The Art Of Wholesaling Properties: How to Buy and Sell Real Estate without Cash or Credit My Life & 1,000 Houses: 200+ Ways to Find Bargain Properties 2016 Daily Diabetic Calendar: Keep track of your high and low blood sugar levels each day. Take results to doctor. BONUS: Doctor Appointment Reminder Developing Lean Leaders at all Levels: A Practical Guide The Secrets to Six Figures in Business Credit: Taking Your Business Credit from "Lemonade Stand" to "Boardroom" Levels Hot Chicken Cookbook: The Fiery History & Red-Hot Recipes of Nashville's Beloved Bird Hot Erotic Adult Sex Pics (300+): Uncensored full nudity pictures of horny MILF women (4): naked photo book of sexy older girls having big boobs and hot ... books with sex pictures by WOW-FACTOR) Hot Erotic Adult Sex Pics (300+): Uncensored full nudity pictures of horny MILF women (5): naked photo book of sexy older girls having big boobs and hot ... books with sex pictures by WOW-FACTOR) Hot Erotic Adult Sex Pics (300+): Uncensored full nudity pictures of horny MILF women (3): naked photo book of sexy older girls having big boobs and hot ... books with sex pictures by WOW-FACTOR) BIG, HOT TO COLD: An Odyssey of Architectural Adaptation High Hentai - Smoking Hot Manga Girls: 420 Coloring Book for Grown-Ups Hot Air Balloons (Rookie Read-About Science: How Things Work) Hot Rod Hamster and the Awesome ATV Adventure! (Scholastic Readers) The Hot Bread Kitchen Cookbook: Artisanal Baking from Around the World The Joy of Ballpark Food: From Hot Dogs to Haute Cuisine

[Dmca](#)