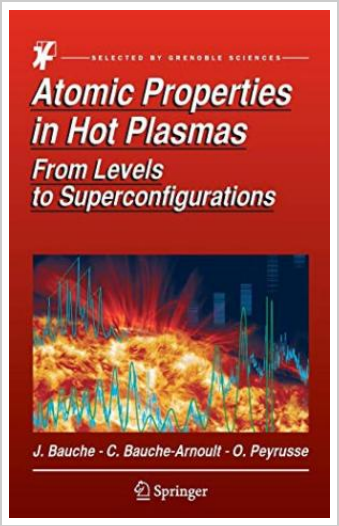

Atomic Properties in Hot Plasmas: From Levels to Superconfigurations (Hardback)

By Jacques Bauche, Claire Bauche-Arnoult, Olivier Peyrusse

Springer International Publishing AG, Switzerland, 2015. Hardback. Condition: New. 1st ed. 2015. Language: English. Brand new Book. 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...

Reviews

The ideal publication i possibly go through. I was able to comprehended every thing out of this published e publication. I am delighted to explain how this is actually the finest pdf i have got read inside my personal existence and could be he very best ebook for possibly.

-- ***Roberto Friesen***

This written book is excellent. It typically is not going to price a lot of. I found out this book from my dad and i encouraged this book to discover.

-- ***Darrin Abbott***