



Stark Broadening of Hydrogen and Hydrogenlike Spectral Lines: The Physical Insight

By Eugene Oks

Alpha Science International Ltd. Hardback. Book Condition: new. BRAND NEW, Stark Broadening of Hydrogen and Hydrogenlike Spectral Lines: The Physical Insight, Eugene Oks, The Stark broadening of spectral lines in plasmas belongs to the highest level of plasma spectroscopy and is consequently its most complicated subject. Therefore, physics of the Stark broadening can be best understood for spectral lines of one-electron systems: hydrogen atoms and hydrogen like ions. This book presents sophisticated analytical advances into this problem, thus yielding a profound physical insight. The book contains also the Tables of Stark widths of hydrogen and deuterium lines in plasmas. These Tables are based on the most advanced theory/code, proven by the comparison with the benchmark experiments. Analytical and numerical results presented in the book have very broad, interdisciplinary practical applications across various areas of physics and technology, such as: Magnetically-controlled fusion; Laser-controlled fusion; Powerful Z-pinches used for producing x-ray and neutron radiation, ultra-high pulsed magnetic fields, and for x-ray lasing; X-ray lasers; Low-temperature technological discharges for plasma processing; and, Cold Rydberg plasmas (a new research area that bridges the gap between atomic physics and plasma physics).



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