

Book Reviews

SPECTRAL LINE BROADENING BY PLASMAS

by Hans R. Griem

Academic Press, New York, 1974, 408 pp., diagrams, 6x9 in., price, \$31.50

The usefulness of line-profile measurements as a diagnostic tool in plasma physics depends on our ability to analyze and interpret the data. In his earlier book, "Plasma Spectroscopy",* Hans Griem developed the theory of the various broadening mechanisms. His new book, "Spectral Line Broadening by Plasmas", closes the gap between theory and practical application for people who are not already expert in the theory of spectral lines.

The book is divided into four parts: Theory, Experiments, Applications, and the Appendices. The appendices contain tables of the line-width parameters for hydrogen and ionized helium, as well as for many other elements. The chapters on experiments and applications offer excellent ex-

amples of the application of the theory. However, it is the invaluable tables that will make this book a necessary tool for anyone working in the field of plasma spectroscopy.

A preliminary version of the book served as the basis for a special lecture course given by the author at the University of Maryland. A rather complete understanding of quantum mechanics and atomic structure is a prerequisite to understanding the theory. However, the application of the tables to specific cases is straight forward. Only a very modest background in spectroscopy and atomic theory is necessary. These facts will undoubtedly make the book more useful as a reference book than as a text book. It is unsurpassed in its field as a reference book.

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* Plasma Spectroscopy - Hans R. Griem, McGraw-Hill Book Company, Inc., New York, N. Y., 1964, 580 pp., diagrams, 6x9 in.