

CONTENTS

Foreword	vii
I. RADIATIVE TRANSFER AND OPACITIES	
Formalism in Radiative Transfer <i>P. Kamasz</i>	3
Benchmark Problems for Radiative Transfer Methods <i>R.W. Lee & J.M. Salter</i>	37
Iterative Solution to the Non-LTE Line Transport Problem <i>J.R. Buchler & L.H. Auer</i>	58
Fast Algorithms for Radiation Transport in Low-Z and High-Z Materials in One Dimensional ICF Targets <i>T.D. Beynon & E.H. Smith</i>	69
The Calculation of the Opacity of Hot Dense Plasmas <i>S.J. Rose</i>	89
Detailed Modeling of Ionization/Radiation in Dense Plasmas <i>D. Duston</i>	107
Spectrum Formation in Dense Non-LTE Plasmas <i>K.G. Whitney</i>	142
Radiation Loss Driven Instabilities in Laser Heated Plasmas <i>R.G. Evans</i>	173
II. ATOMIC PROCESSES IN DENSE PLASMAS	
Influence of Strongly Coupled Plasmas on Photoionization Cross Sections <i>R. Cauble, M. Blaha & J. Davis</i>	195
Angle-Averaged Compton Cross Sections <i>G.H. Nickel</i>	210
Enhancement of Gain in Neon-Like Ions by Pumping with a Quasi-Resonant High Energy Electron Tail <i>J.P. Apruzese & J. Davis</i>	221

**A Simple Classical Method to Evaluate Gaunt
Factors of Atoms and Plasmas**

M. Lamoureux & R.H. Pratt

241

III. PLASMA SPECTROSCOPY

**Line Broadening and Ionization Lowering in
Dense Argon Plasmas**

J. Davis, M. Blaha & U. Gupta

261

**Line Intensities for Diagnosing Laser-
Produced Plasmas**

*R.L. Kauffman, D.L. Matthews, R.W. Lee,
B.L. Whitten & J.D. Kilkenny*

281

**Spectroscopic Diagnostics of Laser Driven
Implosions**

*N.D. Delamater, C.F. Hooper, Jr., R.F. Joyce
L.A. Woltz, R.F. Kauffman & R.W. Lee*

302

An Iterative Peak Finding Code

R.L. Coldwell

315

On the 'Plasma Polarization Shift'

J. Cooper, D.E. Kelleher & R.W. Lee

350

**Electronic Structure of Clusters of Atoms in a
Dense, Low-Temperature Plasma**

L.A. Collins & A.L. Merts

385

**Modeling the Spectroscopy for Partially Filled
L- and M-Shells in Hot Plasmas**

A. Goldberg & B.F. Rozsnyai

423

**The Density Dependence of Dielectronic Satellites
of Helium-Like Transitions**

*J.D. Kilkenny, R.W. Lee, B.L. Whitten,
B.J. MacGowan & D.K. Bradley*

451

**Asymmetry of Stark-Broadened Lyman Lines from
Laser-Produced Plasmas**

L.A. Woltz and C.F. Hooper, Jr.

476

IV. EOS AND MICROFIELDS

**Equation of State of Strongly Coupled Plasma
Mixtures**

H.E. DeWitt

501

Thermal Occupation and Pressure of Resonance States <i>R.M. More</i>	519
Density Functional and Many-Body Theories of Hydrogen Plasmas <i>F. Perrot & M.W.C. Dharma-Wardana</i>	528
Fluctuations of a Hot System of Electrons in a Static Potential <i>F. Grimaldi & A. Grimaldi-Lecourt</i>	544
Calculation of Average Degree of Ionization by a Comparison between TFC Theory and the Average Atom Ionization Model <i>H. Sziechman, A.D. Krumbein & S. Eliezer</i>	572
Quantum Microfield Distributions <i>D.B. Boercker & J.W. Dufty</i>	583