

CONTENTS

Preface	ix
Electromagnetic Energy Density Manipulation and Enhancement in a Relativistic Plasma: The Role of Relativistic Nonlinearities	1
F. Pegoraro	
Relativistic Laser-Plasma Interactions — On the Paradigm of Stimulated Raman Scattering	15
M.M. Škorić	
Laser Radiation Pressure Acceleration of Monoenergetic Protons in an Ultra-Thin Foil	35
B. Eliasson, C.S. Liu, X. Shao, R.Z. Sagdeev and P.K. Shukla	
Beam-Plasma Interactions	50
R.A. Cairns, I. Vongul, R. Bingham, K. Ronald, D.C. Speirs, A.D.R. Phelps, S.L. McConville, K.M. Gillespie, A.W. Cross, C.W. Robertson, C.G. Whyte and B.J. Kellett	
Beam-Plasma Interaction and Nonlinear Effects	59
P.H. Yoon	
Dust Particles Interaction With Plasma Jet	74
C.M. Ticoş, I. Jecu, C.P. Lungu, P. Chiru and V. Zaroschi	
Properties of Ion-Particle Interaction and the Ion Drag Force in Complex (Dusty) Plasmas	83
S.A. Khrapak	
Effective Interaction Potentials and Physical Properties of Complex Plasmas	95
T.S. Ramazanov, K.N. Dzhumagulova, M.T. Gabdullin and Y.A. Omarbakiyeva	
Experiments on Cryogenic Complex Plasma	110
O. Ishihara, W. Sekine, J. Kubota, N. Uotani, M. Chikasue and M. Shindo	
Growth, Sedimentation, Heating and Charging of Dust Particles in the Polar Summer Mesosphere	127
B.A. Klumov	
Dust-Acoustic Waves: Visible Sound Waves	141
R.L. Merlino	
A New Approach to the Coronal Heating Problem	153
J. Vranjes and S. Poedts	
Two Dimensional Inhomogeneous Magnetic Electron Drift Modes	168
D. Shaikh, B. Eliasson and P.K. Shukla	
The Physics of Zonal Flow-Drift Wave Turbulence Interactions: A Synthesis of Time-domain, Fourier Domain, and Direct Visualization Studies	179
G.R. Tyman, C. Holland, S.H. Mueller, M. Xu and Z. Yan	

Turbulent Transport in Fusion Plasmas, Effects of Toroidicity and Fluid Closure	193
J. Weiland	
Influence of Kinetic Effects on the Shape of Mirror Structures	205
T. Passot, P.L. Sulem, E.A. Kuznetsov and P. Hellinger	
Nonlinear Mirror Modes in a Plasma with Nonzero Electron Temperature	213
Y.N. Istomin, O.A. Pokhotelov and M.A. Balikhin	
Alfvén Wave Filamentation and Dispersive Phase Mixing	224
P.L. Sulem, T. Passot, D. Laveder and D. Borgogno	
Creation of Magnetic Fields by Electrostatic and Thermal Fluctuations	233
H. Saleem	
Information Theory and Plasma Turbulence	247
R.O. Dendy	
A Novel Charged Medium Consisting of Gas-Liquid Interfacial Plasmas	258
T. Kaneko and R. Hatakeyama	
Trapping and Frequency Variability in Electron Acoustic Waves	272
C.F. Driscoll, F. Anderegg, D.H.E. Dubin and T.M. O’Neil	
Spin Kinetic Models of Plasmas – Semiclassical and Quantum Mechanical Theory	280
G. Brodin, M. Marklund and J. Zamanian	
Nonlinear Electrostatic Oscillations in a Sharp Plasma Interface	290
F. Haas and P.K. Shukla	
High Intensity Physics — Current and Future Possibilities	301
M. Marklund, G. Brodin, J. Lundin and A. Ilderton	
A Spectral Method for Action-Angle Representation of Linear Waves in Plasmas	315
M. Hirota	
On Hamiltonian and Action Principle Formulations of Plasma Dynamics	329
P.J. Morrison	
A Possible Interpretation of Dark Energy and Matter of the Expanding Universe	345
B. Lehnert	
Analytical and Numerical Aspects in Solving the Controlled 3D Gross-Pitaevskii Equation	356
R. Fedele, D. Jovanović, S. De Nicola, B. Eliasson and P. K. Shukla	
Some Mathematical Aspects of the Correspondence Between the Generalized Nonlinear Schrödinger Equation and the Generalized Korteweg-de Vries Equation	365
R. Fedele, S. De Nicola, D. Grecu, A. Visinescu and P.K. Shukla	

Pseudospark-Sourced Electron Beam for Millimeter Wave and Terahertz Radiation Generation	380
A.W. Cross, H. Yin, D. Bowes, W. He, K. Ronald and A.D.R. Phelps	

Author Index	391
---------------------------	-----