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Electromagnetic Problems"; "3.1. 1D Relativistic EM Vlasov Solvers"; "3.2. 2D Relativistic EM Vlasov Solvers"; "4. Solving Ampère instead of Poisson"; "5. Electrostatic Problems with Dissipation, Krook Collisions and a Particle Source"; "6. Conclusion"; "References"; "EULERIAN-LAGRANGIAN KINETIC SIMULATIONS OF LASER-PLASMA INTERACTIONS"; "Abstract"; "Introduction"; "2. ELVIS Equations and Numerical Method"; "2.1. Model and Geometry"; "2.2. Structure of the Timestep"; "2.3. f Advection: Cubic Splines"; "2.4. Krook Operator"; "2.5. Solving for Ex"; "2.6. Advance of Transverse Fields $E_{\perp}$, v_{ys} "; "3. Electrostatic Application: Langmuir-Wave Dispersion"; "4. Application to Raman Scattering"; "4.1. Kinetic Inflation and Electron Acoustic Scatter (no Krook Operator)"; "4.2. Inclusion of a Krook Operator"; "4.3. Inclusion of Seed Bandwidth"; "5. Conclusion"; "Acknowledgments"; "References"; "GYROKINETIC VLASOV SIMULATIONS FOR TURBULENT TRANSPORT IN MAGNETIZED PLASMAS"; "Abstract"; "1. Introduction"; "2. Vlasov Simulation Methods Based on Symplectic Integrators"; "2.1. Generalization of Splitting Scheme"; "2.2. Verification of Generalized Splitting Scheme"; "2.3. Application to Drift Kinetic System"; "2.4. Verification of Nondissipative Scheme for Drift Kinetic Systems"; "3. Turbulent Transport and Fine-Scale Distribution Functions"; "3.1. Steady and Quasisteady States of Plasma Turbulence";

Sommario/riassunto

There have been important developments in the application of Eulerian codes for the numerical solution of the kinetic equations of plasmas. This book reviews the various developments of the application of Eulerian codes to the kinetic equations of plasmas.