
Contents

1. Motion of a Particle	1
1.1 Equations of Motion.....	1
1.2 Particle Drifts.....	3
1.3 Magnetic Moment.....	7
1.4 Acceleration of Particles.....	12
2. Macroscopic Motion: Principles	15
2.1 Electrical Neutrality.....	16
2.2 Basic Equations.....	18
2.3 Steady-State Solutions.....	23
2.4 Relation between Macroscopic and Microscopic Velocities.....	25
3. Macroscopic Motion: Problems	30
3.1 Electric Currents.....	31
3.2 Motion of Material Across Lines of Force.....	36
3.3 Pinch Effect.....	41
4. Waves in a Plasma	47
4.1 Electromagnetic Waves.....	50
4.2 Hydromagnetic Waves.....	55
4.3 Electrostatic Waves.....	58
5. Encounters between Charged Particles	65
5.1 Distant Encounters.....	66
5.2 Diffusion Coefficients.....	68
5.3 Relaxation Times.....	76
5.4 Electrical Resistivity.....	81
5.5 Thermal Conductivity.....	86
5.6 Radiation.....	88
Appendix—The Boltzmann Equation	94
Symbols	99
Index	103