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Nota di contenuto	Electron Cyclotron Heating of Plasmas; Contents; 1 Introduction; References; 2 Magnetic Fields; 2.1 Magnetic Mirrors: Field Calculations Using the Vector Potential; 2.2 Orthogonal Curvilinear Coordinates and Clebsch Representations; 2.3 Magnetic Mirrors: Field Calculations Using the Scalar Potential; 2.4 The Dipole Limit: Planetary Magnetic Fields; 2.5 Tokamaks: Rotational Transform and the "Safety Factor"; References; 3 Electron Orbits; 3.1 Electron Gyromotion; 3.2 Electron Bounce Motion; 3.3 Electron Drift Motions; 3.4 Relativistic Electron Kinematics for ECH; 3.5 The Hamiltonian Approach 3.6 Drift Orbits in Toroidal Magnetic ConfigurationsReferences; 4 Wave Propagation and Cyclotron Damping in Magnetized Plasmas; 4.1 The Cold-Plasma Dispersion Relation; 4.2 Critical Conditions for Parallel Propagation; 4.3 Critical Conditions for Perpendicular Propagation; 4.4 Clemmow-Mullaly-Allis Diagrams; 4.5 The High-Field Regime; 4.6 The Low-Field Regime; 4.7 A Few Preliminary Implications for ECH Experiments; 4.8 Wave Damping; 4.8.1 A Collisional Model of Damping; 4.8.2 An Introduction to Collisionless Cyclotron Damping; 4.8.3

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Sommario/riassunto

Authored by a highly regarded plasma scientist, this book fills the gap for a topical reference and source with a professional audience in mind. While the use of this critical method at the international fusion reactor, ITER, is covered in detail, the monograph also includes planetary magnetospheres and plasma sources for commercial applications. With exercises and solutions for additional use as course reading.
