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Cyclotron Damping of Whistler Waves

4.8.4 Cyclotron Damping of Waves Propagating as O-Modes4.9 Electrostatic Plasma Waves; 4.10 Estimates of the Electric Field Amplitude; 4.11 Ray Tracing in Inhomogeneous Plasmas; References; 5 Interaction of Electrons with Electromagnetic Fields at Resonance; 5.1 A Rudimentary Stochastic Model of ECH; 5.2 Dynamics of the Fundamental Resonance Interaction; 5.2.1 Dynamics of the Electron Interaction With X-Mode Waves; 5.2.2 Dynamics of the Electron Interaction With Parallel RF Electric Fields; 5.2.3 Dynamics of the Electron Interaction with O-Mode Waves; 5.3 Heating of Relativistic Electrons

5.4 Limit Cycles5.5 Nonlinear Effects: Mapping Approaches; References; 6 Equilibrium; 6.1 Charge Balance; 6.2 Particle and Power Balance; 6.2.1 Particle and Energy Balance for Group 1; 6.3 Breakdown and Start-up; 6.3.1 Breakdown by Heating on the Midplane of a Magnetic Mirror; 6.3.2 Breakdown with Heating Well Off the Midplane; 6.3.3 Breakdown with Heating near the Midplane; 6.4 ECH Runaway: Groups 2 and 3; 6.4.1 Particle Balance for Electrons in Group 2; 6.4.2 Particle and Power Balance for Electrons in Group 3; 6.5 Fokker-Planck Models of Hot-Electron Equilibria

6.6 Ad Hoc Velocity-Space Models of Anisotropic Hot-Electron EquilibriaReferences; 7 Stability; 7.1 Interchange Instabilities; 7.2 Electrostatic Velocity-Space Instabilities Driven by Wave-Particle Interactions; 7.3 Electromagnetic Velocity Space Instabilities; References; 8 Experimental Results in Magnetic Mirrors; 8.1 Hot-Electron Experiments in ""Physics Test Facility"" and EPA [1-3]; 8.2 High-Beta Experiments in ELMO [9]; 8.3 Unstable Electromagnetic Waves in the TPM [12]; 8.4 Heating Experiments in AMPHED [15]; References; 9 Electron Cyclotron Heating in Tokamaks

9.1 Ordinary-Mode Fundamental ECH Absorption in PLT

| 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. |