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Data Base; 4.7 Linear Theories of Electrojet Instabilities; 4.8 Nonlinear Theories of Electrojet Instabilities; 4.9 Future Directions; References; Chapter 5 The Mid-Latitude Ionosphere; 5.1 Competing Influences on the Tropical and Mid-Latitude Ionospheres; 5.2 Electrodynamics of the Tropical and Mid-Latitude Zone; 5.3 Irregularities in the Mid-Latitude Ionosphere; 5.4 Mid-Latitude Plasma Instabilities; References; Chapter 6 High-Latitude Electrodynamics
6.1 Electrical Coupling between the Ionosphere, Magnetosphere, and Solar Wind6.2 Observations of Ionospheric Convection; 6.3 Simple Models of Convection in the Magnetosphere; 6.4 Empirical and Analytic Representations of High-Latitude Convection; 6.5 Observations of Field-Aligned Currents; 6.6 Horizontal Currents at High Latitudes; References; Chapter 7 Effects of Plasma Flow at High Latitudes; 7.1 Ionospheric Effects of Parallel Plasma Dynamics; 7.2 Ionospheric Effects of Perpendicular Plasma Dynamics; 7.3 Electrodynamic Forcing of the Neutral Atmosphere; 7.4 Summary; References
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B.1 Atmospheric and Ionospheric Structure

Sommario/riassunto

For advanced undergraduate and beginning graduate students in atmospheric, oceanic, and climate science, Atmosphere, Ocean and Climate Dynamics is an introductory textbook on the circulations of the atmosphere and ocean and their interaction, with an emphasis on global scales. It will give students a good grasp of what the atmosphere and oceans look like on the large-scale and why they look that way. The role of the oceans in climate and paleoclimate is also discussed. The combination of observations, theory and accompanying illustrative laboratory experiments sets this text apart by m