The Arctic Climate System

Paperback Re-issue

The Arctic can be viewed as an integrated system, characterized by intimate couplings between its atmosphere, ocean and land, linked in turn to the larger global system. This comprehensive assessment begins with an outline of early Arctic exploration and the growth of modern research, followed by an overview of the Arctic's basic physical characteristics and climatic features. Using an integrated systems approach, subsequent chapters examine the atmospheric heat budget and circulation, the surface energy budget, the hydrologic cycle and interactions between the ocean, atmosphere and sea ice cover. Reviews of directions in numerical modeling and the characteristics of past Arctic climates set the stage for detailed discussion of recent climate variability and trends, and projected future states. Throughout, satellite remote sensing data and results from field programs are used to illustrate key processes.

The Arctic Climate System provides a comprehensive and accessible overview of the subject for researchers and advanced students in a wide range of disciplines.

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