This book presents a comprehensive survey of the climatology and meteorology of Antarctica. As well as describing the climate which prevails in the Antarctic, the book also considers the processes by which this climate is maintained and explores links between the Antarctic and the global climate system.

The first section of the book reviews the methods by which we can observe the Antarctic atmosphere and presents a synthesis of climatological measurements. In the second section, the processes which maintain the observed climate are considered, starting with large-scale atmospheric circulation and moving through synoptic-scale weather systems to mesoscale and small-scale processes. The final section reviews our current knowledge of the variability of the Antarctic climate and considers changes that may occur in Antarctica as a result of 'greenhouse' warming. Throughout the book, the links between the Antarctic atmosphere and other elements of the Antarctic climate system (oceans, sea ice and ice sheets) are stressed and the processes which couple the Antarctic with the global climate system are examined. The instruments and platforms used in Antarctic climate studies are discussed (including automatic stations and international data centres), with special emphasis on the role of remote sensing from satellites and numerical modelling techniques.

This volume will be of greatest interest to meteorologists and climatologists with a specialised interest in Antarctica and the Southern Ocean, but it will also appeal to researchers in Antarctic glaciology, oceanography and biology. Graduates and undergraduates studying physical geography or the earth, atmospheric and environmental sciences will find much useful background material in the book.

Cover illustration *An infrared satellite image of a mesocyclone over the Ronne Ice Shelf at 21:09 GMT 4 May 1993.*

Series editors *A.J. Dessler, J.T. Houghton and M.J. Rycroft*

This series of upper-level texts and research monographs covers the physics and chemistry of different regions of the Earth's atmosphere, from the troposphere and stratosphere, up through the ionosphere and magnetosphere and out to the interplanetary medium.

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