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**Cambridge University Press Publishes New Book
on Climate System Modeling**

A new book, *Climate System Modeling*, just published by Cambridge University Press, can aid climate modelers and policymakers in understanding how much the earth's climate may be affected by human activities that increase carbon dioxide and other greenhouse-gas concentrations in the atmosphere.

The 788-page book, which includes 276 two-color figures and 16 full-color plates, is edited by Kevin Trenberth of NCAR. Trenberth is head of the Climate Analysis Section and deputy director of NCAR's Climate and Global Dynamics Division.

It is now widely recognized that human activities such as burgeoning population, industrialization and agricultural practices are transforming the global environment and involve complex scientific, social, economic, and political factors. How will these activities affect the climate and how do these changes compare with natural variations?

Before scientists can address these questions, they must understand and model the global climate system effectively. With reliable climate system models, scientists will be able to determine possible impacts and help guide societies in developing future policies.

Climate System Modeling provides a thorough grounding in climate dynamics and the issues involved in predicting climate change. The book discusses not only the primary concepts involved but also the mathematical, physical, chemical and biological bases for the component models. It discusses the sources of uncertainty, the assumptions made and the approximations introduced.

Climate system models go beyond the more generalized climate models to include all aspects of the climate system: the atmosphere, the ocean, the cryosphere (including snow, sea ice and glaciers), the hydrosphere (including rivers), the biosphere, terrestrial ecosystems, and other land-surface processes as well as all the complex interactions between these components. The biogeochemical cycles in both the atmosphere and the ocean are dealt with in detail.

Instead of projecting and specifying what future atmospheric concentrations of carbon dioxide and methane might be, the goal of these models is to deal comprehensively with the carbon cycle and to predict the future evolution of greenhouse gas concentrations, as well as the impact of those changes on the physical climate. All of these issues, and many more, are at the core of this book.

The book is intended to serve at least two different audiences. The first audience is those students and scientists interested in the entire climate system or components of the climate system that are fully interactive and whose changes may affect the climate. The second audience is more interested in the environmental and societal impacts of climate change. These readers need to understand the future climate projections and what they may mean, as well as to better appreciate the limitations of the climate models.

Copies of *Climate System Modeling*, ISBN 0-521-43231-6, can be obtained directly from Cambridge University Press at 1-800-221-4512 in New York City.

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