Global Physical Climatology

Second Edition

Dennis L. Hartmann

Provides an introduction to the science of climate and climate change that spans the atmosphere, ocean, and land surface, and the interactions among them.

- Covers a great range of information on the Earth's climate system and how it works
- Includes a basic introduction to the physics of climate suitable for physical science majors
- Provides an overview of the central themes of modern research on climate change suitable for beginning researchers
- Incorporates problem sets to aid learning
- Offers an authoritative, clearly written, well-illustrated text with up-to-date data and modeling results

Global Physical Climatology, Second Edition, provides an introduction to the science of climate and climate change. It begins with a basic introduction to the climate system, and then introduces the physics of the climate system, including the principles and processes that determine the structure and climate of the atmosphere, ocean, and land surface.

This basic knowledge is then applied to understanding natural variability of the climate in both the present and past, the sensitivity of climate to external forcing, explanations for the ice ages, and the science of human-induced climate change. The physical principles and computer models necessary for understanding past climate and predicting future climate are introduced.

About the Author

Professor D.L. Hartmann received his BS degree in Mechanical Engineering from the University of Portland, and his PhD in Geophysical Fluid Dynamics from Princeton University. After postdoctoral appointments at McGill University and the National Center for Atmospheric Research, he joined the faculty of the University of Washington, where he is currently a professor in the Department of Atmospheric Sciences, and Senior Fellow of the Joint Institute for the Study of the Atmosphere and Ocean.

Professor Hartmann's research interests include dynamics of the atmosphere, atmosphere–ocean interaction, climate feedback processes and climate change. His primary areas of expertise are atmospheric dynamics, radiation and remote sensing, and mathematical and statistical techniques for data analysis.

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