Introduction to Atmospheric Chemistry is a concise, clear review of the fundamentals of atmospheric chemistry. In ten relatively brief chapters, it reviews our basic understanding of the chemistry of the Earth's atmosphere and some outstanding environmental issues, including air pollution, acid rain, the ozone hole, and global change.

Peter Hobbs is an eminent atmospheric chemistry teacher, researcher, and author of several well-known textbooks. This text and Hobbs' other Cambridge University Press book, *Basic Physical Chemistry for the Atmospheric Sciences* (second edition, 2000), form ideal companion volumes for a full course in atmospheric science. Subjects covered include evolution of the Earth's atmosphere; interactions between solar and terrestrial radiation and atmospheric chemical species; sources, transformations, transport, and sinks of chemicals in the atmosphere; atmospheric gases and particles; cloud and precipitation chemistry; biogeochemical cycling; air pollution; and stratospheric chemistry. Student exercises are provided at the end of each chapter.

The book is designed to be a primary textbook for a first university course (undergraduate or graduate) in atmospheric chemistry and will be adopted in departments of atmospheric science, meteorology, environmental science, geophysics, and chemistry. It is also eminently suitable for self-instruction.

Professor Peter V. Hobbs (University of Washington) is known internationally for his research on many aspects of the atmosphere: clouds, precipitation, aerosols, storms, atmospheric chemistry, and climate. He is the author of the definitive text *Ice Physics* (Oxford University Press), the author of *Basic Physical Chemistry for the Atmospheric Sciences* (Cambridge University Press), coauthor (with J. M. Wallace) of one of the most widely used textbooks in meteorology, *Atmospheric Sciences: An Introductory Survey* (Academic Press), and editor of several other books. He has authored more than 300 scientific papers. Professor Hobbs has served on many national and international committees, including the Scientific Steering Committee of the International Global Atmospheric Chemistry Program. He has been a visiting senior research scientist in England, France, Germany, and Italy.

INTRODUCTION TO ATMOSPHERIC CHEMISTRY

A Companion Text to *Basic Physical Chemistry for the Atmospheric Sciences*

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Preface

This short book is a companion volume and a natural extension to my textbook entitled *Basic Physical Chemistry for the Atmospheric Sciences* (Cambridge University Press, 1995; second edition published in 2000). Together these two books provide material for a first (undergraduate or graduate) course in atmospheric chemistry; they should also be suitable for self-study.

In *Basic Physical Chemistry for the Atmospheric Sciences* the groundwork was laid for courses in atmospheric chemistry and other areas of environmental chemistry. The present book provides a short introduction to the subject of atmospheric chemistry itself. Twenty years ago this subject was a minor branch of the atmospheric sciences, pursued by relatively few scientists. Today, atmospheric chemistry is one of the most active and important disciplines within meteorology, and one with which every geoscientist and environmental scientist should have some familiarity.

The emphasis of this book is on the basic principles of atmospheric chemistry, with applications to such important environmental problems as air pollution, acid rain, the ozone hole, and global change. In keeping with the pedagogical approach of its companion volume, model solutions are provided to a number of exercises within the text. In an appendix, readers are invited to test their skills on further exercises. Answers to all of the exercises and worked solutions to the more difficult ones, are provided.

Thanks are due to Halstead Harrison for allowing me to use some of his exercises, and to Richard Gammon, Dean Hegg, Daniel Jaffe, Robert Kotchenruther, Conway Leovy, Donald Stedman, and Stephen Warren for reviewing various portions of this book. I thank also the National Science Foundation and the National Aeronautics and Space Administration for their support of my own research on atmospheric chemistry.

Comments on this book, which will be gratefully received, can be sent by e-mail to phobbs@atmos.washington.edu. Current information on the book, including any errata, can be found on http://cargsun2.atmos.washington.edu/~phobbs/IntroAtmosChem/Info.html.

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