

Editorial

This book is the ninth volume in the series of books published in the framework of the “European Research Course on Atmospheres” (“ERCA”), the high level post-graduate course in global environmental change organized every year in Grenoble, France, since 1993. Each session provides a total of four weeks of lectures and seminars, given by experts from around the world, and one week devoted to a visit to the experimental facilities of Observatoire de Haute Provence. ERCA represents a unique opportunity for young scientists to get a real sense of the breadth of the atmospheric sciences at the beginning of their careers. The PhD-level students also develop close friendships which last and prove invaluable throughout their professional careers. ERCA has proven its value in many ways, not the least of which is the large and growing number of ERCA attendees who have gone on to make significant impacts in many areas of atmospheric science and global change research.

This new volume contains twenty one chapters covering a wide range of topics. The following subjects are covered: the global mercury cycle; atmospheric emissions and transport of persistent organic chemicals; air-sea interactions of organic compounds in the tropical environment; modelling stable water isotopes; radiative effects of the cloudy atmosphere; solar storms, cycles and topology; biomass burning records in ice cores and lake sediments; uncertainties in climate change projections; climate and environmental change in China; mass balance of the Greenland ice sheet; environmental chambers for atmospheric chemistry; synchrotron X-ray fluorescence analysis in environmental science; satellite remote sensing of tropospheric composition; Rayleigh lidars for temperature measurements in the stratosphere and mesosphere; SAOZ spectrometers for measurement of ozone and NO₂ in the atmosphere; astronomical observations at Observatoire de Haute Provence; air pollution and society; atmospheric brown clouds; terrestrial atmosphere, water and astrobiology; atmospheres and surfaces of small bodies and dwarf planets in the Kuiper belt; prospects for the detection and characterization of extrasolar planets.

Numerous people have provided generous help in the preparation of this volume. I would like to express a particular note of appreciation to the chapter authors who met very tight deadlines in order to bring the volume to completion as swiftly as possible, to Michele Poinot for her tireless efforts in the preparation of the successive sessions of ERCA, and to Isabelle Houlbert for her kind contribution to the making of this book.

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