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Editorial

This book is the eighth volume in the series of books published within the framework of the European Research Course on Atmospheres ("ERCA"). ERCA was initiated in 1993 by the University Joseph Fourier of Grenoble, in order to provide PhD students and scientists from Europe and the rest of the world with a multidisciplinary course, which covers especially: the climate system and climate change; the physics and chemistry of the Earth's atmosphere; the human dimensions of environmental change; the other planets and satellites in the solar system and beyond. Since 1993, sixteen sessions have been attended by more 800 participants from 50 countries. The seventeenth session will take place from 12 January to 13 February 2009.

This new volume contains twenty two chapters dealing with a wide range of topics. The following subjects are covered: the human dimensions of global environmental change; climate change and cryospheric evolution in China; the projections of twenty-first century climate over Europe; the understanding of the health impacts of air pollutants; air quality and human welfare; photocatalytic self-cleaning materials; radiative transfer in the cloudy atmosphere; laboratory modelling of atmospheric dynamical processes; stratospheric ozone; the applications of stable isotope analysis to atmospheric trace gas budgets; nitrogen oxides in the troposphere; the observation of the solid Earth, the oceans and land waters; the surface mass balance of the Greenland ice sheet; sea surface salinity reconstruction as seen with foraminifera shells; sources markers in aerosols, oceanic particles and sediments; the nucleation of atmospheric particles; the characterization of atmospheric aerosol episodes in China; the solar magnetic activity; the present and past climates of planet Mars; the outer solar system; Titan as an analog of Earth's past and future; the detection and characterization of extrasolar planets.

I wish to thank again the authors for preparing the chapters of this new volume. I am also very grateful to Michèle Poinsot for her major contribution to the success of ERCA since 1993 and Isabelle Houlbert and Agnès Henri for editing the ERCA book series.

Grenoble, 14 November 2008

Claude Boutron
Professor at the University Joseph Fourier of Grenoble
Director of ERCA

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