RECENT PROGRESS IN ATMOSPHERIC SCIENCES

Applications to the Asia-Pacific Region

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Applications to the Asia-Pacific Region

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Preface

Recent Progress in Atmospheric Sciences: Applications to the Asia-Pacific Region contains 22 peer-reviewed articles, which cover a spectrum of contemporary subjects relevant to atmospheric sciences, with specific applications to the Asia-Pacific regions. The majority of these papers consist of a review of a scientific subfield in atmospheric sciences, while some contain original contributions. All of the accepted papers were subject to scientific reviews and revisions.

The book is divided into two traditional fields in atmospheric sciences: Atmospheric dynamics and meteorology, and atmospheric physics and chemistry. The authors of these papers are distinguished alumni of the Department of Atmospheric Sciences at the National Taiwan University, residing in the U.S.A and Taiwan. This book is dedicated to the 50th anniversary of the Department of Atmospheric Sciences that occurred in 2004, and to the 80th anniversary of the National Taiwan University, which took place in 2008.

Papers in atmospheric dynamics and metrology cover a range of subjects: EI Niño/Southern Oscillation; ocean-atmosphere-land feedbacks; intraseasonal oscillation and typhoon relationship; convection-radiation-mixing processes in the tropics and climatic impact; analysis of Meiyu frontal systems; modeling and observations of tropical cyclones/typhoons; storm track dynamics; understanding the quasi-equilibria state; assimilation of ocean surface winds for weather forecasting; and mesoscale modeling and applications. In atmospheric physics and chemistry, subjects include: interactions between aerosols and clouds, heat budgets in the context of air/sea interactions, atmospheric radiative transfer, satellite remote sensing of clouds, satellite remote sensing of typhoons and oceans, detection and tracking of Asian dust outbreaks, Doppler radar observations of vortex structures, an understanding of ice cloud microphysics in clouds, a review of zone trends in mega-cities, and analysis of COSMIC data for typhoon studies and weather predictions.

We are immensely grateful to the following colleagues, who graciously agreed to review the submitted manuscripts for this book volume and provided valuable and constructive comments and suggestions which led to substantial improvement in its presentation: Sim Aberson, Julio Bacmeister, Edmund Chang, Jen-Cheng Chang, Julius Chang, Simon Chang, Shu-Hua Chen, Yi-Leng Chen, Tai-Chi Chen, Chia Chou, Jim Coakley, Leo Donner, Robert Fovell, Qiang Fu, Ching-Yuang Huang, David Kratz, Tianming Li, Zhanqing Li, Xinzhong Liang, Yu-Chieng Liou, Tim Liu, Yangang Liu, Michael Mishchenko, Hisashi Nakamura, Vaughan Phillips, Rachael Pinker, Wayne Schubert, Chung-Hsiung Sui, Ming-Jeng Yang, Song Yang, Pao-Kuan Wang, Wei-Chyung Wang, Yuquing Wang, Zifa Wang, Chun-Chieh Wu, Xiaoqing Wu, and Cheng-Ku Yu.

We would like to thank Tara Fickle for her dedicated assistance with various phases of this book project, including the initial editing of the accepted manuscripts, correspondence with the 22 lead authors, and correspondence with the publisher. Ms. Helen Jung is thanked for the design of the book cover. Finally, we thank Kim Tan of World Scientific Publishing for her interest and timely assistance in bringing this book project to completion.

K. N. Liou, *Los Angeles, USA*

M.-D. Chou and H.-H. Hsu, *Taiwan*

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