

Preface

Energy and water are essential components of the earth's climate system. Since 1990, the Global Energy and Water Cycle Experiment (GEWEX) has been an integrated international program of research, observations, and scientific activities aiming, ultimately, at the prediction of global and regional climate change under the World Climate Research Programme (WCRP). The Monsoon Asian Hydro-Atmosphere Scientific Research and Prediction Initiative (MAHASRI) was implemented in 2006 as a Regional Hydroclimate Project (RHP) within the Global Hydroclimate Panel (GHP) targeting the Asian monsoon, originally as a Continental-scale Experiment (CSE) in the former Global Hydrometeorology Panel (GHP), and then as an RHP in the Coordinated Energy and Water Cycle Observations Project (CEOP) under GEWEX. It succeeds the former RHP, known as the GEWEX Asian Monsoon Experiments (GAME), conducted from 1996 to 2005, for which a special issue of the Journal of the Meteorological Society of Japan (JMSJ) was published in 2001 (Vol. 79-1B). Despite the huge effort put into GAME, further collaborative research is needed to predict monsoons. In particular, the dynamics of the seasonal march and intraseasonal variability, which are essential for predicting the Asian monsoon systems, remain undetermined and challenging. The first Pan-WCRP monsoon workshop was held in June of 2005, and focused on key issues of monsoon prediction; it also strongly recommended collaborative research on these issues. An urgently required, fully coordinated framework for Asian monsoon prediction, including its application to water resources and disaster-prevention issues, to follow-up on and coordinate with the GAME activities and MAHASRI has started. The objective of MAHASRI was to develop a hydrometeorological prediction system, particularly on a time scale up to a season, through better scientific understanding of the Asian monsoon variability.

After MAHASRI started its activity under GEWEX, the WCRP-Joint Science Steering Committee (JSC) recommended conducting Asian monsoon research within a broader context, including Climate Variability and Predictability (CLIVAR); specifically, the CLIVAR/Asian-Australian Monsoon Panel (AAMP). Consequently, a cross-cutting activity, the Asian Monsoon Years (AMY 2007–2012), was organized as part of the International Monsoon Study (IMS), a coordinated observation and modeling effort under the WCRP since 2007. AMY aims to improve Asian monsoon prediction for societal benefits through coordinated efforts to improve our understanding of Asian monsoon variability and predictability. It stems from grass-roots scientific and societal

imperatives and includes about two dozen national and multi-national research projects in the Asian monsoon regions, including MAHASRI.

The Asian Monsoon Years coordinated an intensive observation period (IOP) in 2008 and 2009, and MAHASRI took part in this IOP. This special issue was planned to collect the initial results of MAHASRI and AMY 2007–2012, including observation, data analysis, and modeling studies. Although the volume is titled “Special Issue on MAHASRI”, it also included some of the activities of AMY 2007–2012. In addition, some members of AMY contributed to its editorial processes. It contains 25 papers on various aspects of the Asian monsoon. I hope that this issue will expand our knowledge of the Asian monsoon and stimulate further research on this topic.

As a Chief Editor of this special issue, I sincerely thank the Editorial Board members for their diligence in arranging numerous anonymous reviewers and editing: Vice Chief Editor Takehiko Satomura, Jun Asanuma, Tsing-Chang Chen, Yasushi Fujiyoshi, Atsushi Higuchi, Hirohiko Ishikawa, Md. Nazrul Islam, Shinjiro Kanae, Ryuichi Kawamura, Yasumasa Kodama, Jianping Li, Tetsuo Nakazawa, Fadli Syamsudin, Ichiro Tamagawa, Hansa Vathananukij, Manabu Yamanaka, Bin Wang, and Ming-Cheng Yen. In addition, everyone involved in the review process greatly contributed to evaluating and improving the quality of the manuscripts submitted to this issue. I also appreciate the special editorial support from Dr. Kooiti Masuda. Finally, I thank the Meteorological Society of Japan for providing the opportunity to publish this issue as a special issue of JMSJ. Since MAHASRI is a coordinating research activity, it has no specific funding sources or project office. However, valuable support was provided by the Institute of Observational Research for Global Change (IORGC) up until 2009 and the Research Institute for Global Change (RIGC) from 2009 as part of the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), where I work as a team leader and visiting senior research scientist on the Monsoon Hydrological Cycle Research Team, Tropical Climate Variability Research Program. In particular, I express my great thanks to Dr. Masao Fukazawa, past Director-General of IORGC and present Research Director of RIGC for his tremendous support of MAHASRI activity in JAMSTEC.

Jun Matsumoto

Professor, Tokyo Metropolitan University

Team Leader, Research Institute for Global Change (RIGC),

Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

Chief Editor of the Special Issue on MAHASRI
Tokyo, February 2011