



Advanced Institute on the Asian Monsoon System: Prediction of Change and Variability

Honolulu, Hawaii, USA, 2-12 January 2008

Over three billion people in Asia rely on monsoon precipitation for water, and changes in this precipitation influence agriculture, economic activity, and public health. Given the regional trends of population demographics, rapid industrialization and urbanization, and consequent regional emissions of greenhouse gases and aerosols that contribute to global warming, it is important that early career scientists in the Asia-Pacific region have up-to-date knowledge of recent advances in monsoon science and develop long-term collaborative effort to assess various modeling schemes and outputs with regard to future climate changes in the Asian-Pacific region.

Twenty early-career meteorologists from across the Asia-Pacific region and North America met during 2-11 January 2008 to attend a series of lectures on the Asian monsoon and to explore possibilities for future collaboration. The participants were selected from an applicant pool of over 70 and came from universities, government labs, and meteorological forecast centers in over ten countries from Asia and USA. Invited faculty from China, India, Japan, Korea, and the United States gave the lectures, with the largest group of lecturers coming from the International Pacific Research Center (IPRC) of the University of Hawaii. The meeting was held in the facilities of the East-West Center located on the campus of the University of Hawaii at Manoa.

One goal of this meeting was to inform early-career researchers and practitioners through a series of interactive lectures about the fundamental physics of monsoon climate, especially in relation to the variability and predictability of the Asian-Australian monsoon system and its hydrological cycle, available data resources, advances in satellite observations, and numerical modeling of the monsoon systems at various scales. Lectures focused on monsoon variability on intraseasonal, interannual, and decadal time scales, the role of land surface hydrology, Indian Ocean dynamics, and the effects of ocean coupling, including the phenomena of the El Nino-Southern Oscillation and the Indian Ocean Dipole. Various modeling studies, especially the recent fourth assessment of the Intergovernmental Panel on Climate Changes (IPCC) report with regard to future climate changes in the Asian-Pacific region were reviewed. The skill of numerical models in simulating and predicting the Asian monsoon was discussed, and participants were introduced to the multi-model ensemble forecast available at the APEC Climate Center and the climate data available at the Asia-Pacific Data Research Center, which is located at the IPRC.

Another goal of the Institute was to foster international collaboration on both fundamental research and the operational prediction of monsoon variability. One of the important activities of the Institute is the series of participants' seminars. Participants presented their own work and received constructive comments. They also identified needs for collaboration or research support. By the end of the program, participants

coalesced into four smaller groups focusing on the topics of intraseasonal variability, interannual variability, decadal variability, and prediction and predictability of the Asian monsoon. Some of these focus groups intended to maintain contact for a few years following the Institute, and one group even presented an idea for a collaborative study on interannual variations of monsoon onset in Southeast Asia. A list server has been set up for continued interaction between all participants.

The Institute was directed by Prof. Bin Wang of the International Pacific Research Center (IPRC) and the Department of Meteorology, School of Ocean and Earth Science and Technology, University of Hawaii. Hassan Virji, deputy director of the Global Change System for Analysis, Research, and Training (START: <http://www.start.org>) organized the institute. The Institute was sponsored by the Asia-Pacific Network for Global Change Research (APN), with additional support provided by IPRC, START and the East West Center.

Full information on the lectures, participant presentations and plans for future collaborative research can be found at <http://www.start.org/Monsoon2008/home.html>