

International Research for Prevention and Mitigation of Meteorological Disasters in Southeast Asia

MEXT Special Coordination Funds for Promoting Science and Technology for FY 2007 - 2009
in Asia S&T Strategic Cooperation Program

Newsletter No. 1 (Dec. 2007)

Contents

Outline

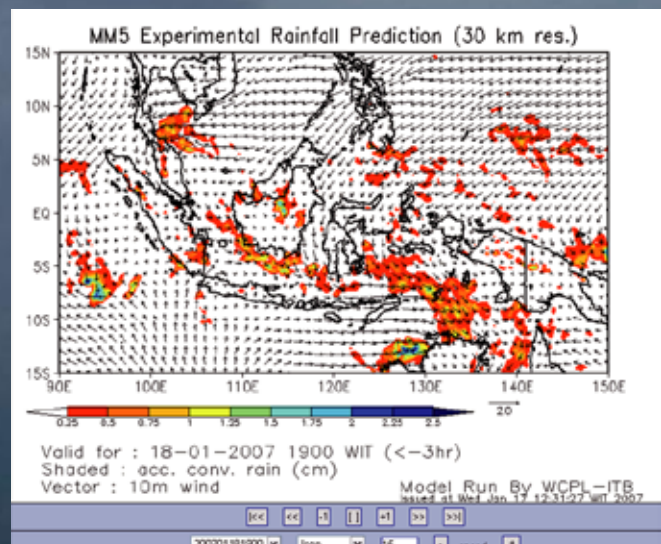
Major Research Subjects

Topics

The 1st International Workshop

JSPS-LIPI Workshop

The 5th AOGS Annual Meeting



Outline

Motivations

Risk of high-impact weather in Southeast Asia is potentially increasing because of the economical development and urbanization. Global warming and climate change might become another factor for the increase of the risk. It would be a good timing for us to start an international research project for prevention and mitigation of meteorological disasters in Southeast Asia, because the research environment is rapidly changing by the growth of computer powers and the improvement of internet infrastructures. Regional meso-scale models can be run with personal computers for downscale numerical weather predictions (NWP). Data transfer via internet is getting fast enough to perform near-real time NWP. Utilization of probability information obtained by ensemble NWP is a challenge for the development of decision support tools. Assessments of the impact of new observational data on the improvement of NWP with advanced data assimilation schemes are also important subject in these days.

Thus, we have just started “International Research for Prevention and Mitigation of Meteorological Disasters in Southeast Asia” under the Ministry of Education, Culture, Sports, Science and Technology (MEXT) Special Coordination Funds for Promoting Science and Technology, supported for FY 2007-2009 under Asia S & T Strategic Cooperation Program.

Research Groups

Three main affiliations of this international research project are Kyoto University, Meteorological Research Institute (MRI) of Japan Meteorological Agency (JMA), and Institut Teknologi Bandung (ITB) in Indonesia. Shigeo Yoden, Professor of Meteorology in Kyoto

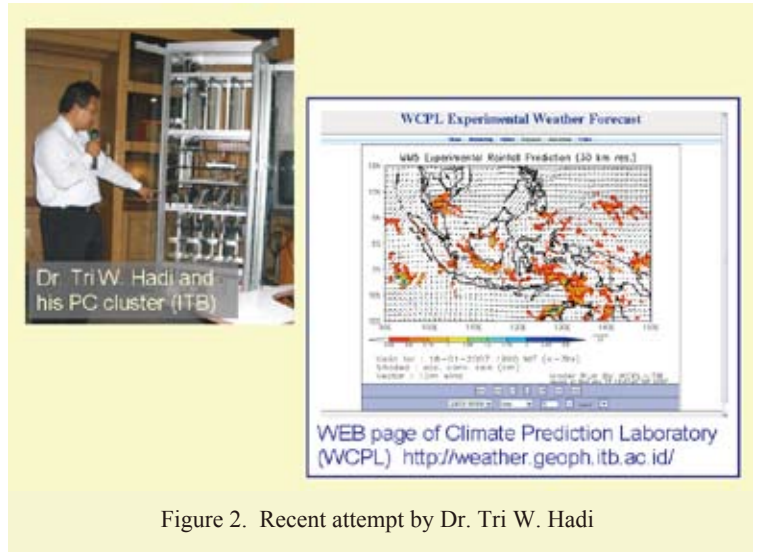


Figure 2. Recent attempt by Dr. Tri W. Hadi

University, is the leader of this project, and Kazuo Saito, Head of the 2nd Research Laboratory, Forecast Research Department of MRI, and Emmy Suparka, Professor and Vice President of ITB are group leaders in these two institutes. As shown in Fig. 1, fundamental research and system development will be done at Kyoto University, while operational model development will be done at MRI/JMA. Real-time experiment will be done at ITB and other institutes outside Japan.

Figure 2 shows an example of our recent preliminary attempts. Tri W. Hadi, Lecturer of ITB, constructed his own PC cluster by himself to perform downscale NWP. Experimental weather forecast is on the web page of Weather and Climate Prediction Laboratory (WCPL) at <http://weather.geoph.itb.ac.id/>

Our purpose is to establish “International Scientist-Network for Prevention and Mitigation of Meteorological Disasters in Southeast Asia” through research and development of downscaling NWP systems.

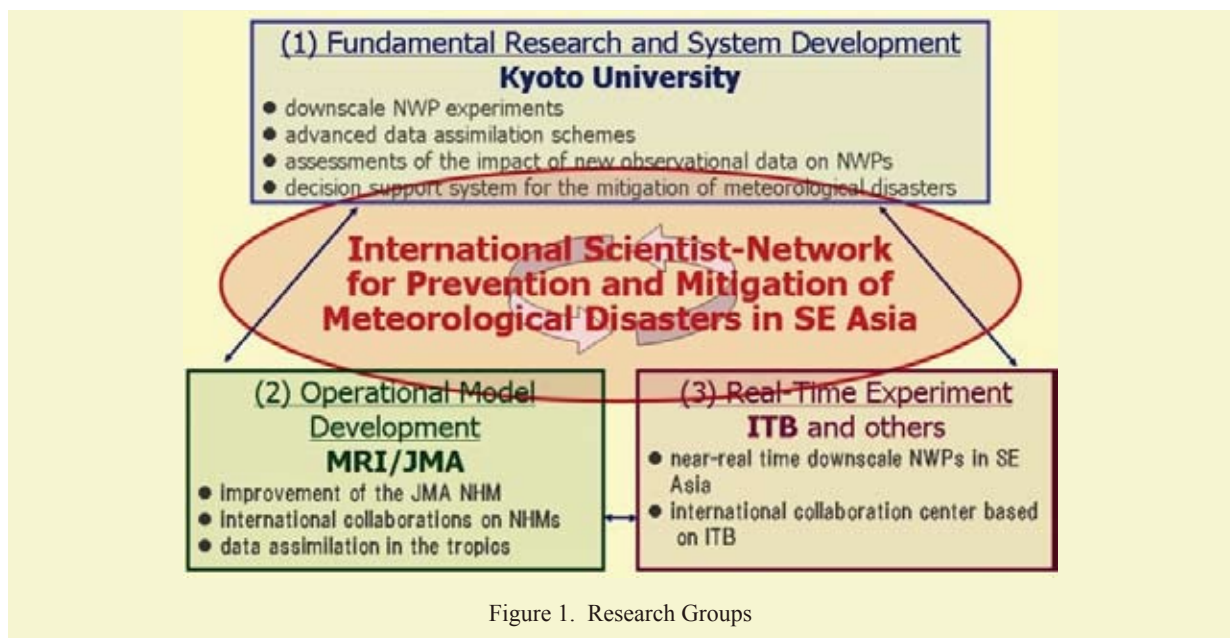
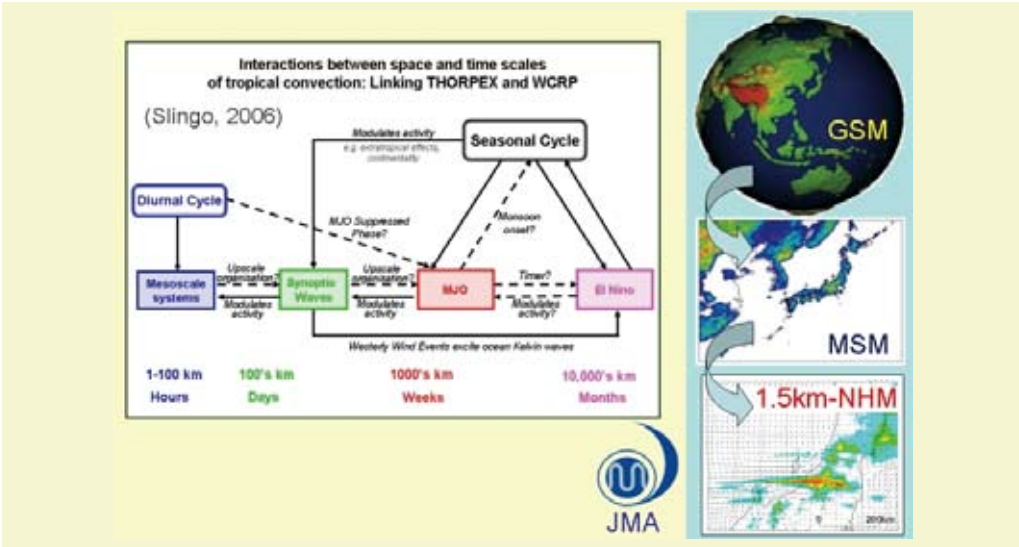


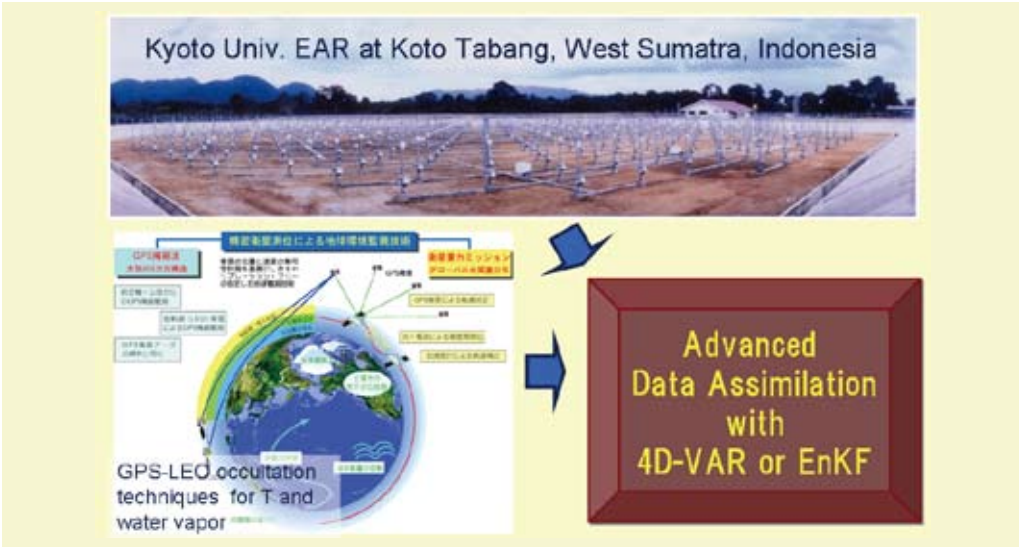
Figure 1. Research Groups

Major Research Subjects

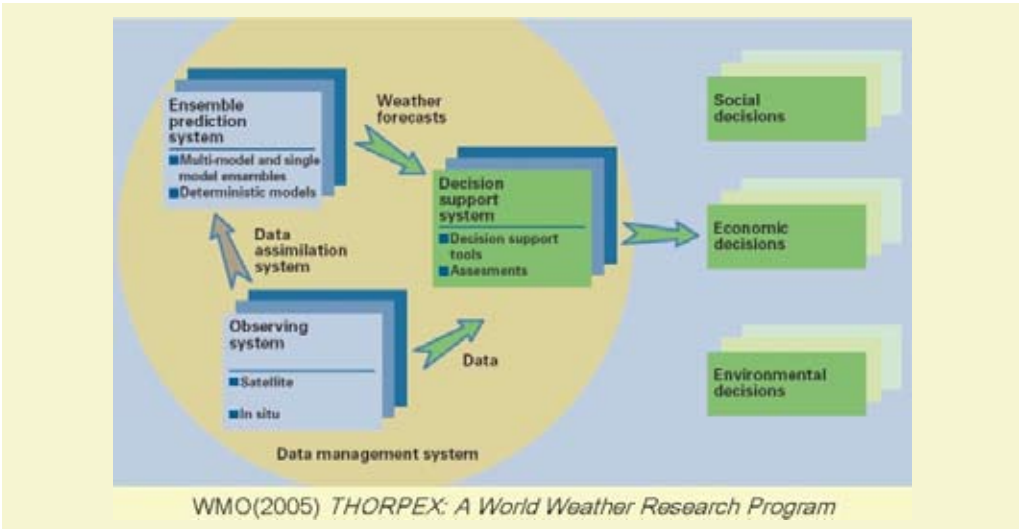
(a) Experimental downscale numerical weather predictions (NWP) in the tropics with regional meso-scale models



(b) Assessments of the impact of new observational data on the improvement of NWP) with advanced data assimilation schemes



(c) Development of a unified data base and decision support system for prevention and mitigation of meteorological disasters



WMO(2005) THORPEX: A World Weather Research Program

Topics

The First International Workshop on Prevention and Mitigation of Meteorological Disasters in Southeast Asia

The first international workshop of this research project will be convened by Shigeo Yoden (Kyoto University) and Kazuo Saito (Meteorological Research Institute, Japan Meteorological Agency) in March 3-5, 2008, at the Palace Side Hotel in Kyoto, Japan. Details on this workshop will be announced in the following web page: <http://www-mete.kugi.kyoto-u.ac.jp/project/MEXT/>

JSPS-LIPI workshop "Japan Indonesia Reserch Collaboration on Natural Disasters"

This workshop was held on June 20, 2007 in Jakarta, Indonesia, under the auspices of JSPS (Japan Society for the Promotion of Science) and LIPI (Indonesian Institute of Sciences) to build strong networks of international cooperation to prevent natural disasters between Japan and Indonesia. Shigeo Yoden (Kyoto University) presented an overview paper on this new project.

The final report of the workshop can be found at the following web page: http://www.jsps.go.jp/english/e-astrategy/02_report070620.html



A session "Numerical Weather Prediction and Data Assimilation in Southeast Asia" (AS06) convened at the 5th Annual Meeting of Asia Oceania Geosciences Society

This session is convened by Tieh-Yong Koh (Nanyang Technological University), Shigeo Yoden (Kyoto University), and Tri Wahyu Hadi (Institut Teknologi Bandung) in the 5th AOGS Annual Meeting held in Busan, Korea, 16-20 June, 2008. Details can be seen in the following web page: <http://www.asiaoceania.org/aogs2008/mars/pubSessionView.asp?sID=51>

Session Description: Despite advances in numerical weather prediction (NWP) and data assimilation techniques for the recent decades, little discussion (and perhaps progress) has been made on these fronts in Southeast Asia. In this session, we want to share our experiences in actually trying to simulate realistically the region's synoptic and mesoscale weather over 1-2 day time scale. Downscaling of weather information in longer time scales in combination with global long-range forecasts is also an important subject of this session. Through the discussions we want to initiate a platform for scientists interested in mesoscale NWP and data assimilation in Southeast Asia to interact. We also welcome more theoretical work like data assimilation techniques for using data from advanced observational platforms like satellite and radar.

Abstract Submission Deadline: 24 January, 2008.

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