

# 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. 2 (Mar. 2008)

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## MRI Scientists visit NTU and ITB

Two scientists, Kazuo Saito and Syugo Hayashi of the Meteorological Research Institute (MRI), visited the Nanyang Technological University (NTU) of Singapore and the Institut Teknologi Bandung (ITB) of Indonesia in February 2008. Their visit was done to discuss the collaboration on the International Research for Prevention and Mitigation of Meteorological Disasters in Southeast Asia and to confirm the portability of the JMA nonhydrostatic model (NHM) on computers at overseas research institutes.

On Monday 11 and Tuesday 12, Saito and Hayashi visited the Division of Applied Physics at the School of Physical and Mathematical Sciences of NTU, and met Assistant Professor Tieh-Yong Koh and Dr. Rosbintarti Kartika Lestari, who has been studying the regional atmospheric modeling under the guidance of Prof. Koh. At NTU, a cluster machine consists of IBM e-servers with AMD Opteron252 2.6GHz 16CPU and AMD Opteron Dual Core 275 2.2GHz 48CPU has been used for numerical weather prediction experiments with the COAMPS model. A test of NHM using JRA25 reanalysis data of JMA and visualization by 'Webpandah' (a visualization tool for NHM data developed at JMA) were conducted. Figure 1 shows the example of a simulation by NHM with a horizontal resolution of 30 km where JRA25 data at 00 UTC 7 January 1982 is used for the initial condition.

The duo also visited the satellite office of KAGI21 (Kyoto University Active Geosphere investigations for the 21st century COE Program) and the Faculty of Earth Sciences of ITB on Thursday 14 and Friday 15 February to meet Assistant Professor Tri Wahyu Hadi and his students, I Dewa Gede Junnaedhi and Nurjanna Joko Trilaksono (Fig. 2). At ITB, a



Figure 2. Photograph taken at the satellite office of KAGI21 of ITB. From left to right, Nurjanna Joko Trilaksono, Syugo Hayashi, Tri Wahyu Hadi, Kazuo Saito, I Dewa Gede Junnaedhi, and Ida Yayuk Purnamasari (Secretary of the KAGI21 satellite office).

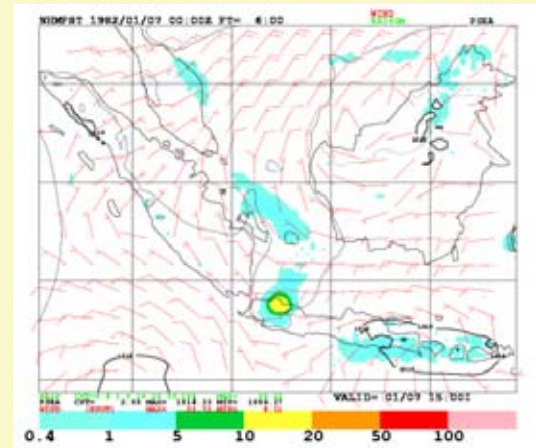


Figure 1. Surface wind and 6 hour accumulated precipitation by NHM with a horizontal resolution of 30 km. JRA25 data at 00UTC 7 January 1982 was used as the initial condition. 5 CPU of the NTU's cluster machine was employed.

cluster machine consists of 8 nodes 4 CPU Intel Quad-Core 660 2.4 GHz has been employed for near real time NWP experiments with MM5 and WRF models. A test of NHM using JMA's high resolution GSM data distribute from the Japan Meteorological Business Support Center (JMBSC) was successively performed. Figure 3 shows the example of a simulation by NHM where high resolution GSM data at 00 UTC 14 February 2008 is used for the initial condition.

(Kazuo Saito, MRI/JMA)

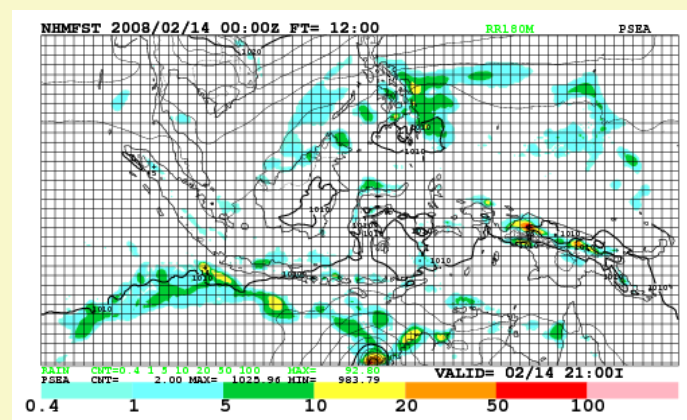


Figure 3. Surface pressure and 3 hour accumulated precipitation at 12 UTC 14 February 2008 by NHM with a horizontal resolution of 30 km. High resolution GSM data at 00UTC 14 February 2008 is used as the initial condition.

## Report on the 1st International Workshop

The first international workshop of this research project on “Prevention and Mitigation of Meteorological Disasters in Southeast Asia” was held on March 3-5, 2008, at the Palace Side Hotel in Kyoto, Japan. In total fifty eight researchers participated from twelve countries and regions in East Asia, Southeast Asia and South Asia.

The workshop was opened by the address and introduction about the MEXT program by Dr. Hirokazu Kobayashi, Program Officer of JST (Japan Science and Technology Agency). After the keynote address about this project by the project leader, Shigeo Yoden (Kyoto University), there were seven sessions with a total of forty two invited talks: Suparka, Hadi, Saito, Hara, Islam, Xin, Ratag, Thalongsengchanh, and Gouda had presentations in the Session I “High-resolution numerical weather predictions”; S.Hayashi and Nishizawa in the Session II “Tutorials and demonstrations”; Bounlom, Saravuth, Tangang, T. Hayashi, Seko, Lestari, Tsuboki, Iwasaki and Ueno in the Session III “High-impact weather and its simulation/prediction”; Tsuda, Shoji, Begkhuntod, H. Ishikawa, Kunii, Duc, Enomoto, and Prasad in the Session IV “Satellite observations, their applications and data assimilation”; Koh, Kang, Lai, Mukougawa, Jampanya, Sanga, Promasakha and Horinouchi in the Session V “Model output statistics, predictability, and decision supports”; Satomura, Trilaksono, Otsuka, Y. Ishikawa and Takemi in the Session VI “High-resolution model as a fundamental research tool”; and all participants had open discussions in the Session VII “Future research and collaborations”. Further details can be found in our Web page,



<http://www-mete.kugi.kyoto-u.ac.jp/project/MEXT/>

There were presentations about new research results on numerical weather predictions, new observational data, and decision support tools/systems, and we also had enthusiastic discussions. We do hope this workshop will help us for making future international research collaborations among Asian scientists. We are going to have the second international workshop at ITB in Bandung, Indonesia in March 2009, and the third one at Ritsumeikan Asia Pacific University in Beppu, Japan in March 2010.

(Seiya Nishizawa, Kyoto Univ.)



## Topics

### The International Symposium for Applications of “Kizuna” of Wideband InterNetworking engineering test and Demonstration Satellite (WINDS) and successful launch of “Kizuna” on February 23, 2008

The International Symposium for Applications of “Kizuna” of Wideband InterNetworking engineering test and Demonstration Satellite (WINDS) was held on December 4 (Tuesday), 2007 at Meiji Kinenkan in Tokyo. There were 6 Addresses, including “ICT based e-health and disaster mitigation management system” by Professor Utoro Sastrokusumo (School of Electrical Engineering and Informatics, Institut Teknologi Bandung (ITB), Indonesia), and 5 Speeches. Shigeo Yoden (Kyoto University) participated in the Panel discussion “WINDS Application Experiments Now Needed in the Asia Pacific Region” as one of 6 panelists, and presented our international research activity, “An experimental down-scale numerical weather predictions in Southeast Asia with the aid of WINDS”.

The “Kizuna” is a communications satellite that enables super high-speed data communications of up to 1.2 Gbps to develop a society without any information availability disparity, in which everybody can equally enjoy high-speed communications wherever they live ([http://www.jaxa.jp/countdown/f14/index\\_e.html](http://www.jaxa.jp/countdown/f14/index_e.html)). The “Kizuna” was launched at 5:55 p.m. on February 23, 2008 (JST) successfully with H-IIA F14 from the Tanegashima Space Center. The multi-beam antennas had been successfully deployed at 8:35 p.m. on March 1 (JST) and the critical operation phase was completed. The “Kizuna” will further drift into the geostationary orbit at about 143 degrees east longitude in March. The initial functional verification of the onboard equipment will be done for about four months.

Our proposal for test use of the “Kizuna” has been accepted to

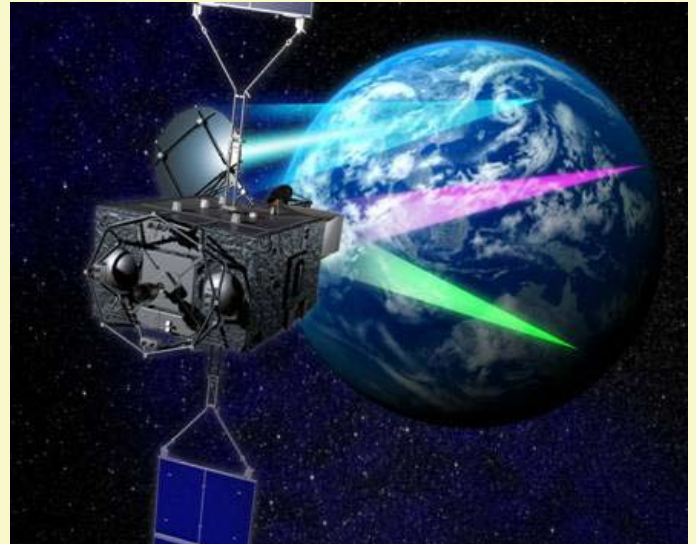


Photo No. : P-017-06848 in the KIZUNA Photo Gallery at the JAXA Web page, [http://www.jaxa.jp/index\\_e.html](http://www.jaxa.jp/index_e.html)

transfer ensemble forecast data and adaptive observation data for downscale numerical weather predictions. We hope we can also use the “Kizuna” for teleconference between Kyoto University and ITB in the second International Workshop on Prevention and Mitigation of Meteorological Disasters in Southeast Asia, which will be held in March, 2009 in Bandung, Indonesia.

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