Application of the JMA Nonhydrostatic Model to the Tropics -- International Research for Prevention and Mitigation of Meteorological Disasters in Southeast Asia --

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Keywords: NWP in tropics; disaster prevention

References

- [1] Seko, H., S. Hayashi, M. Kunii and K. Saito, 2008: Structure of the Regional Heavy Rainfall System that Occurred in Mumbai, India, on 26 July 2005. *SOLA*, **4**, 129-132.
- [2] Hayashi, S., K. Aranami and K. Saito, 2008: Statistical Verification of Short Term NWP by NHM and WRF-ARW with 20 km Horizontal Resolution around Japan and Southeast Asia. SOLA, 4, 133-136.
- [3] Kuroda, T., K. Saito, M. Kunii and N. Kohno, 2010: Numerical Simulations of Myanmar Cyclone Nargis and the Associated Storm Surge Part I : Forecast Experiment with NHM and Simulation of Storm Surge. J. Meteor. Soc. Japan. 88. (in press)
- [4] Saito, K., T. Kuroda, M. Kunii and N. Kohno, 2010: Numerical Simulations of Myanmar Cyclone Nargis and the Associated Storm Surge Part II: Ensemble prediction. J. Meteor. Soc. Japan, 88. (in press)
- [5] Kunii, M., Y. Shoji, M. Ueno and K. Saito, 2010: Mesoscale Data Assimilation of Myanmar Cyclone Nargis. J. Meteor. Soc. Japan, 88. (in press)
- [6] Shoji, Y., M. Kunii and K. Saito, 2010: Mesoscale Data Assimilation of Myanmar Cyclone Nargis. Part II: Assimilation of GPS derived Precipitable Water Vapor. J. Meteor. Soc. Japan, 88. (submitted)