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Title: KIAPS next generation global model

The purpose of nine year project of Korea Institute of Atmospheric Prediction Systems (KIAPS) is developing a next generation global model for operational use at the Korea Meteorological Administration. After conducting basic research and development in the first stage of the project, KIAPS configured the beta-version NWP system from data assimilation to post-process (KIM: KMA Integrated Model). KIAPS has been running KIM on the semi-realtime basis since July 2015. Since the start of semi-realtime run, the performance of KIM has improved significantly due to constant update of the model.

KIM's dynamic core consists of non-hydrostatic governing equation set on cubed sphere and spectral element method. Physics packages are developed based on Weather Research and Forecasting (WRF) model and Global-Regional Integrated Model system (GRIMS) physics packages. KIAPS scientists have implemented several vital aspects of physics parameterizations such as non-orographic gravity wave drag, gray-zone convection, top-down mixing method in PBL, prognostic cloudiness, and radiation-cloud interactions. The KIM is a self-cycled 4D-EnVAR data assimilation system with its own data acquisition and quality control. In this talk, the performance of the KIM will be presented on top of the brief overview of KIM in terms of dynamics, physics, and data assimilation system.