Verification and evaluation of the medium-range forecasts with the Korean Integrated Model (KIM)

In-Jin Choi, Kyung-Hee Seol, Soo Ya Bae, and Eunjeong Lee

KIAPS, Seoul, Korea, Republic Of (ij.choi@kiaps.org)

Global numerical weather prediction (NWP) system named the Korean Integrated Model (KIM) has been developed by the Korea Institute of Atmospheric Prediction System (KIAPS) as a national project since 2011. KIM consists of a spectral element non-hydrostatic dynamical core with full physics package, and it has been periodically updated every three or six months since July 2015. The current version released in December 2018 is denoted by 3.3 (called as KIM3.3 hereafter). In this study, the performance of KIM3.3 medium-range forecasts is statistically verified and evaluated for the period of selected testbed cases to identify the model improvement by the upgrade from previous version and to figure out the model bias of current version. Forecast skill scores of the KIM3.3 looks comparable to that of current NWP system (Unified Model, UM) operated by the Korean Meteorological Administration (KMA) in a cold start testbed. Based on the detailed diagnosis on the radiation and near-surface variables against observation and analysis, several issues on model performance in the KIM3.3 will be discussed.