8.1 Seasonal variation of the surface wind forecast performance of the 3km-grid WRF-RTFDDA forecasting system over China.

Pan, Linlin, Yubao Liu, Gregory Roux, Yuewei Liu, Luca Delle Monache, *National Center for Atmospheric Research,* Ju Hu, Shuanglong Jin, and Shuanglei Feng, *Chinese Electric Power Research Institute, SGCC, China*

Seasonal variation of the performances of newly developed high-resolution WRF-RTFDDA based deterministic numerical weather prediction (NWP) system is investigated through objective evaluation of surface and upper level variables such as winds, temperature and humidity in this study. The forecasting skill of the deterministic system was tested on the 3 km output. The test of the period of operation is one year. The analysis/forecast cycle is run every 3 hours for deterministic system. The model outputs are validated against observations from stations over China objectively. The statistics of the system performance is calculated on a station-by-station basis as well as for the grid average in terms of traditional metrics such as domain/station average bias, root mean square error, mean absolute error, and the correlation between observation and model outputs. Statistics shows that the high-resolution deterministic system has advantage in forecasting the detailed structures of weather features and can update rapidly. The seasonal variation of the model performance is discussed.