

The Observation Suite Assimilated in the CMA NWP System

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Abstract

In recent years, the Chinese new generation Global/Regional Assimilation and Prediction System (GRAPES) is upgraded and improved gradually in Numerical Weather Prediction Center of China Meteorological Administration. The observation suite assimilated in GRAPES 3D-Var and 4D-Var will be presented in this talk. The operational GRAPES-Var is capable of assimilating observations from radiosonde, synop, aircraft and Atmospheric Motion Vectors (AMV), the global navigation satellite radio occultation observations (GPS RO), scatter-meter sea surface winds, radar observations, satellite radiances (AMSU, ATMS, AIRS and IASI). The Microwave Temperature Sounder (MWTs), Microwave Humidity Sounder (MwHS) and Global Navigation Satellite System Occultation Sounder (GNOS) on board of the Chinese FengYun-3C are also assimilated in GRAPES.

The Chinese next-generation geostationary meteorological satellite FY-4 will be launched in the end of 2016, equipped with advanced geostationary radiation imager (AGRI), geostationary interferometric infrared sounder (GIIRS) and lightning mapping imager (LMI). Research towards assimilating the high frequency and high resolution of AGRI, GIIRS and LMI data will be carried out in GRAPES 4D-Var.

Finally, some preliminary results from Observation System Simulation Experiments (OSSE) and Forecast Sensitivity to Observations (FSO) in order to coordinate the future observing system in China will be presented.