

Preliminary test of CrIS in GSI Hybrid EnKF-3DVAR system

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Xiaoyan Zhang, James Jung and Sid Boukabara

Before the NPP CrIS real data become operational, a 1-month CrIS proxy data assimilation experiment was performed using the GDAS/GFS Hybrid EnKF-3DVAR system. The experiment was executed based on a control run that is similar to the current NCEP/EMC parallel operational run. One month of CrIS real-time proxy buffer data generated from NESDIS/STAR were used in GDAS/GFS from Dec. 15, 2011 to Jan. 15, 2012. In those buffer data, there are 399 CrIS channels selected. The purpose was to test the assimilation of CrIS proxy data in NCEP next generation operational GDAS/GFS Hybrid EnKF-3DVAR. It is a necessary step to ensure the assimilation of real CrIS data work properly in this system once the data become available. The bias correction, quality control and the observation error were examined in this experiment. The preliminary results show the system converged correctly with the CrIS proxy data assimilation. The angle dependent bias correction works properly for selected 399 channels.

Based on the successful one month experiment with the proxy data, we also tested the assimilation of the Golden Day (Feb. 24, 2012) real CrIS data with the same experiment set up. The same 399 CrIS channels were used for the proxy test and the Golden Day. The results show that the GDAS/GFS Hybrid system worked differently for the real CrIS data from proxy data. The detailed results and analyses will be presented in the poster.