

Assimilating Satellite Data into Antarctic Mesoscale Prediction System

Hui Shao*, Zhiquan Liu, Thomas Auligne, Dale Barker, Syed Rizvi and Jordan Powers

*National Center for Atmospheric Research

In addition to other difficulties present in polar area weather forecasting, the lack of conventional observations in the Antarctic region presents a challenge to the real-time Antarctic Mesoscale Prediction System (AMPS) in the effort to provide more accurate forecasts serving the United States Antarctic Program (USAP). Therefore, the advent of satellite data measurements is a major motivation for establishing the AMPS Testbed at the NCAR Data Assimilation Testbed Center (DATC) with the goal to evaluate, and eventually ingest, new satellite observations into AMPS. The DATC has conducted various extended tests of the end-to-end system to assess the impact of Constellation Observing System for Meteorology, Ionosphere and Climate (COSMIC) refractivity measurements and Advanced Microwave Sounding Unit-A (AMSU-A) satellite radiance measurements on short-term forecasts in the Antarctic domain. This paper will present the latest results from these impact studies and a preview of future plans.