

Application of the WRF – LETKF System over Argentina: a Case Study.

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Improving the initial conditions of the short-range numerical weather prediction models is one of the main concerns of the meteorological community. Different data assimilation methods have been developed and are used operationally at the most important prediction centers of the world.

The Weather and Research Forecasting Model (WRF-ARW) was implemented experimentally at the National Meteorological Service of Argentina in 2010, and has been run on daily basis in a quasi – operational form. The inclusion of data assimilation, particularly using the Local Ensemble Transform Kalman Filter (LETKF) method produced at the University of Maryland, in this forecasting system is being developed since the end of 2012.

In this article we present a mesoscale convective system case study that occurred over the central part of Argentina on December 6th of 2012, which produced several damages in various cities. The forecasts obtained from the WRF – LETKF system are evaluated. An experiment carried out including the Atmospheric Infrared Sounder (AIRS) retrieval products, particularly the atmospheric humidity and temperature profiles, revealed an improvement in the forecasts, in agreement with similar experiments from other regions.

These preliminary results encourage our efforts in the development of a consistent data assimilation system, capable of being implemented in real time at the National Meteorological Service of Argentina.