AOGS 2005

The impact of radar data as similation on the numerical simulation of the typhoon Maemi

SEONYONG LEE[1] and JIDONG GAO[2]

[1]*Forecast Research Laboratory of the Meteorological Search Institute, Korea*
[2]*Center for Analysis and Prediction of Storms University of Oklahoma, USA*

Korea Meteorological Administration (KMA) archived several years of highresolution wind and reflectivity data from its S-band and C-band radars. From this basis, we tried to ingest those radar data into a data assimilation tool and checked the impact of the radar data on the numerical weather prediction.

We took the ARPS 3DVAR [1] for radar data assimilation tool and the ARPS [2] for the numerical weather prediction model. We selected the 14th typhoon in 2003, Maemi, for our experiment case since the radial wind for this case needs some special effort to unfold aliasing, and the fine structure of the case was well observed from one of the KMA radar sites, Jindo, and from other observatories of the autosonde, the AWS, and the wind profiler within the Jindo radar range.

The result of the experiment showed that, when we include radar data at the data assimilation, the moisture field at the analysis field persisted until 3 hour forecast of simulation, and the wind field over the inland of domain showed reasonable smallscale circulation. Other result from this experiment will be talked.

Keywords: Radar; ARPS; 3DVAR; data assimilation.

Reference

[1] J. Gao, M. Xue, K. Brewster and K.K.Droegemeier, A Three-dimensional Variational Data Analysis Method with Recursive Filter for Doppler Radars, *J. Atmos., Oceanic., Technol.*, **21**,457-469(2004)

[2] M. Xue, K. K. Droegemeier, V. Wong, A. Shapiro, and K. Brewster, ARPS version 4.0 User s guide [Available at http://www.caps.ou.edu/ARPS] 380pp(1995)