

Assimilation of the radar data in the (1.3 km) high resolution AROME model and estimates of the observation error correlations

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The assimilation of radial velocities and radar reflectivities in the AROME model has been operational for several years at 2.5 km of resolution. An important change in the AROME system is currently considered: it consists of an increasing of the horizontal resolution of the model (1.3 km) and its 3D-Var assimilation. To prepare such evolution, estimates of observation error correlations have been computed in order to evaluate the possibility of increasing the radar data density. This work is based on a posteriori diagnosis of the assimilation system. It leads in particular to an improved thinning of the radar data. Explanations and illustrations of the improved assimilation system will be shown.

In the same time, the AROME domain grows and it becomes fundamental to assimilate some European radars from the neighbouring countries. An important work is currently under way to evaluate and to assimilate the volumes of radar data from the EUMETNET/OPERA project. Some examples of the impact of such assimilation in the AROME system will be shown.