



High resolution data assimilation setup in ALADIN/CHMI

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Data assimilation algorithms combine two sources of information, background fields and observations according to their respective errors. In limited area models we cannot obtain background error sampling for scales larger than their computational domains. Therefore, the so-called digital filter blending was developed in CHMI. It is a technique preserving large scale circulation structures from the host model analysis and small scale features resolved by the high resolution guess of the ALADIN model. The next development step is the introduction of local data assimilation on top of digital filter blending.

Here we shall present a proposal of background error covariances suitable for 3DVAR assimilation scheme. We also discuss evolution of background error covariances for different analysis times and spatially varying background error standard deviations.

We verify the performances of the proposed Blending-3DVAR data assimilation setup including adapted observation selection for heavy precipitation episodes affecting Central Europe in 2013. Special attention is given to the extreme precipitation event of June 1 – June 3 2013 showing high sensitivity to initial conditions.