



Estimating observation impact in the regional-scale KENDA/COSMO system

Martin Weissmann (1), Matthias Sommer (1), and Andreas Rhodin (2)

(1) LMU München, Hans-Ertel-Centre for Weather Research, Data Assimilation Branch, Germany
(martin.weissmann@lmu.de), (2) Deutscher Wetterdienst, Germany

The impact of observations on forecast quality is in many aspects an interesting quantity: It indicates, which observation types could be given more weight in the assimilation system, helps in tuning observation operators and supports the planning of further investments in the observation system. However, the direct computation of observation impact in an assimilation and forecasting system is computationally expensive and therefore not feasible in an operational environment. To address this issue, different ensemble-based approximations have been suggested recently. One of them is now being implemented for KENDA, the pre-operational localized ensemble transform Kalman filter (LETKF) for the regional weather forecasting model (COSMO-DE) of Deutscher Wetterdienst. It exploits the fact that the impact of specific observation classes can be efficiently estimated through operationally computed quantities in an ensemble Kalman filter without an adjoint model.