



High resolution radar rainfall assimilation with latent heat nudging

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Precipitation is certainly one of the most relevant parameters for weather forecast. Yet, quantitative precipitation forecasting is still a weak spot of NWP, especially for the convection dominated warm season. Reasons for the low performance include model deficiencies, and the lack of a properly defined initial model state. Weather radars are able to provide information on precipitation related phenomena, and the latent heat nudging is a technique to incorporate this information in a NWP model.

Next generation operational NWP system in the COSMO consortium will run a model with grid spacing around 2km. This talk reports on the work done at MeteoSwiss to evaluate and characterize the latent heat nudging scheme at this scale. Emphasis is put on the extent to which the latent heat nudging can introduce precipitation and small scale flow features into the initial state of a forecast and improve quantitative precipitation forecast. To this end assimilation simulations of idealized and real convective systems have been carried out.