LETKF Perturbations by Ensemble Transform in a Cloud Resolving Model

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Recently, Duc et al. (2018) presented the diagonally predominance property of the positive symmetric ensemble transform matrix and reported that initial perturbations obtained from a diagonal matrix produce better ensemble forecasts than the ones obtained from the conventional ET in experiments using real observations. In this paper, we show detailed structures of perturbations by LETKF and by diagonal transform matrix, and compare their evolution in a cloud resolving model with deep convection.