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Ensemble-based precipitation estimation over the continental U.S. during summer 2007

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An ensemble Kalman filter (EnKF) is used in conjunction with a cloud-resolving model, the UW-NMS, to produce estimates of convective rainfall over the continental United States for the summer season 2007.

Observations from conventional sources (ACARS, METAR, SAO) are assimilated as well as brightness temperatures from GOES-12. Results indicate that the EnKF is able to produce reasonable estimates of accumulated rainfall at most sites, and, perhaps most importantly, to produce very good estimates of the associated forecast error.