

## Assimilating every 30-second phased array weather radar data in a torrential rainfall event on July 6, 2018 around Kobe city

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To investigate the impact of every 30-second phased array weather radar (PAWR; Yoshikawa et al. 2013, Ushio et al. 2014) observation on a simulation of a severe rainfall event occurred on July 6, 2018 around Kobe city, we perform 30-second-update 100-m-mesh data assimilation (DA) experiments using the Local Ensemble Transform Kalman Filter with the Scalable Computing for Advanced Library and Environment regional numerical weather prediction model. Two experiments were performed: the test experiment with every 30-second PAWR observation (TEST), and the other without observation (NO-DA).

The TEST analysis shows intense rainfalls with detailed structure of active convection, better matching with the PAWR observation compared to NO-DA analysis. In the forecast experiment, the forecast initialized by the ensemble mean analysis of TEST is skillful for 20 minutes compared with NO-DA, although the skill is decreased rapidly. The results suggest that the PAWR DA have a potential to improve the numerical simulation for this torrential rainfall event.

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