Model Parameter Estimation with Data Assimilation using NICAM-LETKF

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This study aims to improve forecasts of numerical weather prediction (NWP) models by optimizing model parameters with data assimilation. Kotsuki et al. (2018, JGR) succeeded in improving global precipitation forecasts at 112-km-resolution NICAM (Nonhydrostatic ICosahedral Atmospheric Model) by estimating a parameter of Berry (1967)'s large-scale condensation scheme using satellite-observed precipitation data and the Local Ensemble Transform Kalman Filter (LETKF). Extending the previous study, this study explores to improve the forecasts further using other satellite observations such as cloud liquid water.