

**Pseudo-Orbit Data Assimilation for Atmospheric GCMs**

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**Abstract**

Data assimilation for nonlinear models such as weather forecasting models is a challenging task. A promising alternative approach is proposed to produce more consistent estimates of the model state, and to estimate the (state dependent) model error simultaneously, using the Pseudo-orbit Data Assimilation method with a stopping criteria. This method is shown to be more efficient and more coherent than the variational method and outperform the Ensemble Kalman Filter in nowcast on large scale models.