



CLIM Program Transition Workshop

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Lecture: *Accounting for Model Errors Due to Sub-Grid Scales by Stochastic Parametrization for Data Assimilation*

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Abstract:

We investigate the use of stochastic parametrization to account for model errors due to sub-grid scales in data assimilation of chaotic systems. Using data from fine simulations of the system, the stochastic parametrization leads to a non-Markovian model that captures the key statistical and dynamical properties of the full system. The non-Markovian model can then be used in data assimilation algorithms to improve the performance of state estimation and prediction. Tests on the two-layer Lorenz 96 model show that such a non-Markovian stochastic parametrization approach improves data assimilation, and it outperforms the techniques of localization and inflation in the ensemble Kalman filter with perturbed observations.