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# Treatment of the error due to unresolved scales in sequential data assimilation

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In this paper a method to account for model error due to unresolved scales in sequential data assimilation, is proposed. An equation for the model error covariance required in the extended Kalman filter update is derived along with an approximation suitable for application with large scale dynamics typical in environmental modeling. This approach is tested in the context of a low order chaotic dynamical system.
The results show that the filter skill is significantly improved by implementing the proposed scheme for the treatment of the unresolved scales.