

1. Introduction

standard sequential EnSRF on which the AEnSRF is based, by using simulated observations.

2. EnSRF and AEnSRF algorithms



and output operations, respectively.



Figure 2. The analysis equations of EnSRF (a) and AEnSRF (b).

Comparison of Sequential Ensemble Square-Root Filter (EnSRF) and Four-Dimensional Asynchronous EnSRF Algorithms for the Assimilation of Simulated Radar Data

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)	min	data
,		Gutte

e	Analysis end time	Forecast start time	Time span of data batch	
	88 min	45 min	1 min	
	88 min	49 min	3 min	
	88 min	48 min	5 min	
	85 min	45 min	10 min	
	85 min	45 min	5 min	
	85 min	45 min	20 min	
	85 min	45 min	10 min	
each experiment group, there are one AEnSRF experiment and one				

and 85 min (c and d). AEnSRF on the left and EnSRF on the right







lines.

6. Future plan

The above results were obtained using WRF. A scalar (non-parallel) implementation of AEnSRF for ARPS has been completed based on the more sophisticated ARPS EnKF system. OSSE results of AEnSRF for ARPS are similar to those for WRF. To further improve the efficiency of the overall EnKF system, the calculation and output of observation priors are being carried out within the ARPS forecast model, avoiding writing out and reading in of full model state at non-analysis times. The implementation of an MPI version is in process.

We plan to examine the impact of AEnSRF in the presence of model error, and apply the algorithm to real data cases, and eventually use it in realtime EnKF analysis and forecasting.