CORRIGENDUM

JEFFREY S. WHITAKER AND THOMAS M. HAMILL

Physical Sciences Division, NOAA/Earth System Research Laboratory, Boulder, Colorado

(Manuscript received and in final form 30 December 2005)

We have discovered a coding error in the underlying computations that were used to produce Fig. 3 from Whitaker and Hamill (2002). This figure showed the ensemble-mean analysis error from the ensemble Kalman filter (EnKF) and the ensemble square root filter (EnSRF) for a 40-dimensional version of the model of Lorenz and Emanuel (1998) with a forcing of 8.0 and a time step of 0.05. In the production of this figure, our ensemble data assimilation code generated synthetic observations at each model grid point at each time that should have been independent. While observation errors changed with each data assimilation cycle, we discovered a coding bug that inappropriately caused all observation errors at a given time to be the same. A corrected Fig. 3 is reproduced below (Fig. 4 results were essentially unchanged). There was a slight degradation in the relative improvement of our proposed EnSRF relative to the EnKF when compared with the original published version of the figure.

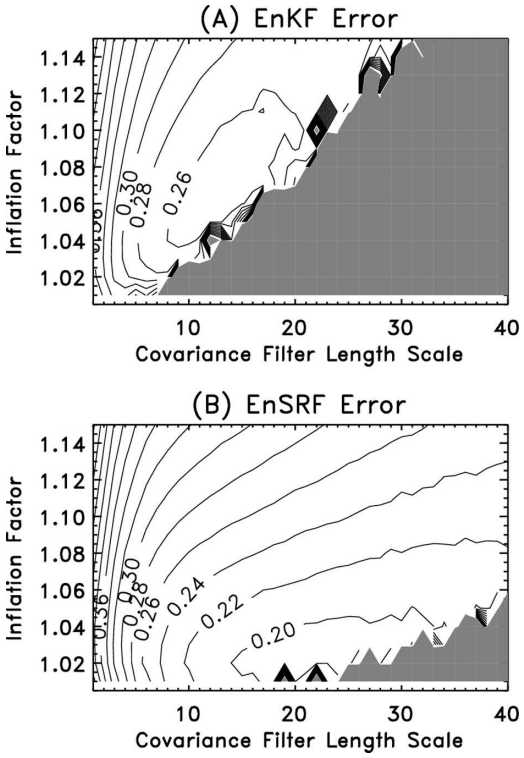

FIG. 3. Ensemble-mean error as a function of the distance at which the covariance filter goes to zero, and the covariance inflation factor, for (a) the EnKF and (b) the EnSRF. Results are for a 10-member ensemble averaged over 5000 assimilation cycles using the model of Lorenz and Emanuel (1998), with observations of every state variable. Observations have unit error variance. Shaded areas indicate regions in parameter space where the filter diverges.

REFERENCES

Lorenz, E. N., and K. A. Emanuel, 1998: Optimal sites for supplemental weather observations: Simulation with a small model. *J. Atmos. Sci.,* **55,** 399–414.

Whitaker, J. S., and T. M. Hamill, 2002: Ensemble data assimilation without perturbed observations. *Mon. Wea. Rev.,* **130,** 1913–1924.

Corresponding author address: Thomas M. Hamill, Physical Sciences Division R/PSD 1, NOAA/Earth System Research Laboratory, 325 Broadway, Boulder, CO 80305-3328.
E-mail: tom.hamill@noaa.gov