The finite-size EnKF and inflation

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The recently published "finite size" ensemble Kalman filter (EnKF-N) is reviewed. The EnKF-N explicitly considers the uncertainty in the forecast moments (mean and covariance), thereby not requiring the multiplicative inflation commonly used to compensate for the intrinsic bias of the standard EnKF. Thus, in the perfect model setting, it avoids the laborious process of tuning the inflation factor. This presentation consolidates the work of the earlier literature on the EnKF-N, substantiates the scalar inflation perspective, and proposes a hybrid scheme that also estimates model error.