Dear Prof. Mandel,

As previously announced, I have sent the new version of your paper to Reviewer 2 of the first version. I have now received his/her evaluation. As you will see, he/she recommends acceptance of the paper, subject to a minor correction in the conclusion.

I will follow Referee 2's advice, and accept your paper. At the same time, I, as Editor, consider a few points still require clarification or correction. These are

1. Introduction, l. 6, … *an application the Bayes* …. Syntax is incorrect.

2. Following lines. *In the methods considered here,* […] *the probability distributions are represented by their mean and covariance.* Well, as you write shortly later, the probability distributions are represented in the EnKF by a finite sample of points in state space.

3. P. 2, l. 7, … *in the linear and Gaussian case,* … (actually, my understanding is that linearity is here much more important than gaussianity, which must be in a sense ensured by the central limit theorem).

4. P. 5, two lines after Eq. 4. *The advantage of the EnKF update formula (Eq. 2) is that it can be implemented efficiently without having access to the whole sample covariance matrix* $\mathbf{C}^N$. What do you exactly mean ? And is that statement specific of EnKF, or would it apply to any form of KF ?

5. P. 10, ll. -4-3, *While the purpose of a single analysis step is to balance the uncertainties of the state and data rather than minimise the RMSE,* …. It is not clear what *balance* means here. In any case, the purpose of the Kalman equation (Eq. 2), where statistical covariance matrices are present, is to statistically minimise the RMSE.

So, unless you have reasons to disagree, please make the above corrections, including the one requested by Referee 2.

I thank you for having submitted your paper to *Nonlinear Processes in Geophysics*, and look forward to receiving the final version.

Olivier Talagrand
Editor, *Nonlinear Processes in Geophysics*