

Both referees, who are the same ones as for the first version of the paper, recommend acceptance of the paper, subject to minor revisions and technical corrections. I follow their advice, adding that I have myself below a number of editing suggestions.

I ask the authors to revise their paper along the referees' comments and suggestions, as well as along mine. I ask them to give a point-to-point response to all of these comments and suggestions. In case they do not agree with a particular comment or decide not to follow a particular suggestion, they must state precisely their reasons for that.

#### My editor's suggestions

1. Ll. 42-43, ... *such as localization, first introduced in (Bengtsson et al., 2003) and independently in van Leeuwen (2003)*. You then mention (l. 75) earlier references to localization (in the context of EnKF, but that may be confusing).

I suggest you change the text above to ... *such as localization, first introduced for particle filters, and independently, in (Bengtsson et al., 2003) and van Leeuwen (2003)*.

2. Ll. 62-63, sentence starting *To address this lack ...* I suggest *To improve its convergence properties, Ba et al. (2022) proposed alternative formulations of SVGD*

3. L. 82, *While **that** work ...* is more appropriate here (compare with *This work ...* in l. 47)

4. L. 125, define superscripts  $f(j)$  and  $a(j)$

5. Ll. 200-201, word missing ? .... *in Hunt et al. (2007) **and** has some resemblance ...*

6. Ll. 205 and 214 (and maybe elsewhere). From what I understand, it is not a question of correlation, but of statistical dependence. I suggest to write on l. 205 *we assume that the variables located outside of a neighborhood  $C_l$  of  $x_l$  are statistically independent of  $x_l$* .

7. L. 219,  $\Gamma_l \circ \Sigma$ , I understand  $\circ$  denotes the Schur product ?

8. 219-220, ... *around  $l$  with only one's and zeros, as in eq. (15) below*

9. L. 478, the number given there (16-17, 18-19) must be the number of positive Lyapunov exponents, not their value. Say it more precisely.