

Review for “Barents-2.5km v2.0: An operational data-assimilative coupled ocean and sea ice ensemble prediction model for the Barents Sea and Svalbard”

Recommendations: Accept for publication

I highly appreciate the authors’ effort to address the issues raised in the previous round of review. The revised version has improved accessibility, and I can better appreciate the work compared to the previous version. Please find below for a few very minor (mostly typos) comments.

Specific line-by-line comments

- Line 209:

... is estimated by the “variance” of the ensemble of background states -> covariance.

It is good to also mention that the estimate is flow-dependent, which is a key advantage of ensemble DA methods.

- Line 224:

The reference is off.

- Lines 231-232:

Is SIC observation linearly related to the model variables (is it the weighted average of several model variables)?

- Line 233:

“ENKF” -> EnKF

- Line 249:

The reference is off.

- Lines 417-420:

It might be helpful to mention that \bar{P}_b and F_b are the x and y axis in Figure 14 respectively.

- Line 431:

“ $0 > \text{SIC} < 0.1$ ” => “ $0 < \text{SIC} < 0.1$ ”

- Lines 545-555:
"0>SIC<0.4" => "0<SIC<0.4"

- Captions in Figure 8 & 10:
Why are the RMSEs negative? Should they be ME instead?

- Figure 17:
I can understand that the post-processed SIC is between 0 and 1, so when the analysis ensemble is outside [0,1] they will be corrected. However, some of the subplots seem to suggest the analysis ensemble members with SIC within [0,1] are also changed. Why?