Ocean Science

Discussions

Interactive comment on "A multiscale ocean data assimilation approach combining spatial and spectral localisation" *by* Ann-Sophie Tissier et al.

Anonymous Referee #2

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The manuscript is clearly written and presents a data assimilation approach focusing on more accurate retrievals of the large scale SSH components from the data.

The authors should better justify the use of eigenmodes of the laplacian on a sphere for scale separation. These basis functions are natural in atmospheric applications, but in the oceanic data assimation (into regional configurations in particular) it might be better to employ alternative expansions (e.g., laplacian eigenfunctions defined for the domain in use). Apart from being orthogonal, they have number of additional attractive properties, including spatial inhomogeneity of the supported scales and their implicit relation to model dynamics (e.g., tides).

Minor issues:

1) Referring to the impact spatial localization, I would rather say that large scale correlation structures are "heavily suppressed", but not "removed" or "not used" in the analysis associated with spatially localized covariance.

2) grammar issues (p.2: "spatial space", l.30, p.4: lines 7,14,20 etc..; caption to Fig. 11: description of panel c missing..). please correct

Interactive comment on Ocean Sci. Discuss., https://doi.org/10.5194/os-2018-132, 2018.