Geosci. Model Dev. Discuss.,
https://doi.org/10.5194/gmd-2017-298-RC2, 2018

Geoscientific Model Development Discussions

Interactive comment on "Data assimilation cycle length and observation impact in mesoscale ocean forecasting" *by* Paul Sandery

Anonymous Referee #2

Received and published: 21 May 2018

A brief examination of the relationship between data assimilation cycle length and observation impact in a practical global mesoscale ocean forecasting setting is provided.

This paper tries to address a practical issue but a very important one. The paper is well written and organized, and the results are useful for the broader modeling and forecasting community. Thus, the paper should be accepted for publication. However, there are multiple places that need to be corrected and/or changed, so a minor revision is justified.

Specific Comments: 1) Figure 1 is poorly displayed, at least in the paper version that will be used by most readers. "Unassimilated forward independent super-observations are shown with coloured circles and grey outline on the same colorscale": the grey outline is barely visible, while it is virtually impossible to see the coloured circles. Maybe

a second panel can be shown?

2) Figure 3 is confusing with three colors, blue, red and orange (?). I am guessing the red color is simply the overlap between blue and orange. This plot is relatively simple, and can be displayed by black-and-white lines (solid vs. dotted) showing a small bar or shaded lines representing the +/- 1 standard deviation.

3) p1, line 18, "...project into unobserved variables", replace "into" with "onto"

4) p2, line 5, replace "$\sim\sim$" with "approximately"

5) in the "Data and Methods" section, there is no place to mention the model grid size, which should be explicitly stated. I have to read the Oke et al., 2013a to find out this information as 1/10 degree.

6) p3, line 8, replace "3 hourly" with "3-hourly"

7) some acronyms not commonly used by the community are not necessary, e.g., MAI, MAD

8) Figure 2, only one star (representing forecast base time) is shown, should be displayed at the center of every 3-day cycle, right?

9) the font for some figures should be somewhat larger, particularly if multiple figures are printed on the same page

Interactive comment on Geosci. Model Dev. Discuss., https://doi.org/10.5194/gmd-2017-298, 2018.