

Interactive comment on “Impact of SLA assimilation in the Sicily Channel Regional Model: model skills and mesoscale features” by A. Olita et al.

Anonymous Referee #2

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The subject of assimilating altimetry in regional models, and the impact it will bring, is a difficult one. The results presented in this paper are modest, but they deserve publication. The presentation quality is not always good (spelling, color bar not always labelled in figures). In addition the text is a bit verbose and technical, especially with respect to its contents: either it should be more concise, or it should contain more science.

The introduction presents the important role of the SC in the Mediterranean, especially regarding the exchanges of water masses between E and W basins, and the role of eddies in transporting mass. I would have expected to see the success of data assimilation in the light of this – is the resulting transport more consistent to what is known? I know that this is ambitious, but in my view this should probably be the ultimate test of using DA here.

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page 424 lines 1-2: SLA is certainly not the most effective data for assimilation *at the regional scale*. See what is done in IOOS regions for instance.

page 425 para 2.1: I am wondering if something is done to match the steric cycle in the model and the one contained in V0 and V1, over the modelling domain? Also page 429 I would have liked to see average misfits to estimate the amount of bias remaining in the RMSE.

page 429: Is the obs scheme hindering the effect of assimilation in the domain interior? Does it allow modifications in the net mass transport through the channel?

page 429 line 1: Is this an overall RMSE in time? Or an overall bias? Unclear.

page 431: It would have been nice and to the point to see estimates of the changes brought by "assimilated" eddies onto the mass transport and/or to the eddy/mean flow interactions (Reynolds stresses).

page 432 para 1: How about adding a theta-S constraint in 3DVar?

Interactive comment on Ocean Sci. Discuss., 9, 421, 2012.

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