

Interactive comment on “Forecast skill score assessment of a relocatable ocean prediction system, using a simplified objective analysis method” by Reiner Onken

Anonymous Referee #1

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Title: Forecast skill score assessment of a relocatable ocean prediction system, using a simplified objective analysis method
Author: Reiner Onken

GENERAL comments

The paper presents the Relocatable Ocean Prediction System (ROPS) which is implemented in the Western Mediterranean Sea. ROPS is one-way nested in the MERCATOR global ocean model by downscaling. The model has assimilated, with a simplified objective analysis (OA) method, observational data collected in June 2014 in the main-frame of the REP14-MED experiment. A sensitivity study with respect to four OA parameters is then performed. The objectives exposed in the abstract are well achieved

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and the work is well structured and organized. Minor revision are suggested to the author, as described below.

SPECIFIC comments

• @page 1 rows 8:9 – In addition to (De Dominicis et al. 2014) and Rowley and Mask, 2014 I suggest to cite Trotta et al. 2016 as another recent work on Relocatable Ocean Prediction System based on NEMO HD code i.e. Trotta et al (2016) A Structured and Unstructured Relocatable ocean model for Forecasting (SURF). Deep Sea Research Part II: Top. Stud. Oceanogr., 133, pp.54-75

• @page 3 sect.2.1 – Specify also which numerical schemes have been used for momentum advection and advection of tracers.

• @page 4 row 17 - The grid spacing ratio parent/child is set to 6.2. Why this value and how it is compared with other dynamical downscaling studies?

• @page 4 rows 28:33 - Are the interpolated fields adjusted in order to prevent violation of the continuity equation?

• @page 6 row 10: - How much spin-up period is needed for the child model?

• @page 6 row 13 - How are the eddy viscosity and diffusivity coefficient of the child related to the parent model? Do the child/parent models use the same lateral subgrid-scale mixing scheme?

Technical corrections.

• @page 1 row 8 – The citation De Dominicis, 2013 should be De Dominicis et al. 2014 (check references list).

• @page 5 row 8 – the sentence ‘iss 1 hour’ should be “is 1 hour”

• In the vertical distribution of the skill score (SS) (fig 9,11) increase the thickness of the vertical dot line (SS=0) in order to better distinguish the positive and negative value

of the SS or you can use a contrasting background colour as in fig.12.

The series of experiments are well done and I suggest the author to address the above points and re-submit the paper.

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