

Interactive comment on “Modelling of the circulation in the Northwestern Mediterranean Sea with the Princeton Ocean Model” by M. A. Ahumada and A. Cruzado

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Reply to the Anonymous Referee 1

M. A. Ahumada, A. Cruzado

We would like to thank the anonymous referee for his constructive comments, which will contribute to the improvement of this work. In the following paragraphs we would like briefly answer each of his comments.

Comment: Although I find the paper interesting, I have a difficulty to understand the scope of this work: if it is to describe the circulation of the NWMS on a climatological basis then other models within MFSTEP have covered the topic with exactly the same

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horizontal resolution. On the other hand, if the scope of the paper is to describe the nesting effort with the coarser resolution OGCM model then more analysis is required along this line (for example testing the nesting scheme behavior with high frequency atmospheric forcing or more frequent OBC updates should be more appropriate)

Comment: The implementation of the model and in particular the nesting scheme should be made clearer. The reader should be properly informed how the river runoff is parameterized into the model, what type of climatological forcing is used (and how this forcing was derived), why the authors have adopted the particular nesting procedure, etc.

Answer: One of the aims of this work is to configure the Princeton Ocean Model (POM) at regional scale in order to investigate if this model is capable of reproduce the major features of the circulation in the Northwestern Mediterranean as known from observations and to improve what other numerical modeling works have made. With the purpose of to achieve this aim, we choose the methodology developed during the MF-SPP, which has been published in several papers. So, a first approximation we used the same atmospheric forcing (see Korres and Lascaratos, 2003) and the same resolution of the OGCM (see Demirov and Pinardi, 2002; Tonani, 2003) in order to do a comparison of results. On the other hand, concerning the nesting effort, it should be noted that the nesting is part of the methodology used by all regional model implemented within the MFS.

Comment: The authors should be compare their results directly with coarse resolution model results (OGCM) and the observed climatology in order to prove the functionality of their model and the nesting scheme they have adopted. Such an inter-comparison is totally missing in the present manuscript.

Comment: Finally, I feel that the conclusions derived from this work could be enriched especially if some extra effort is devoted to study the functionality of the nesting procedure between the two models.

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Answer: Regarding these comments, we are working on them.

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