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Ocean Science Discussions

Interactive comment on "High-resolution nested model for the Lebanese coastal area, Eastern Mediterranean: implementation and climatological runs" *by* N. Kabbara et al.

Anonymous Referee #1

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General comments:

The manuscript "High-resolution nested model for the Lebanese coastal area, Eastern Mediterranean: implementation and climatological runs", by N. Kabbara, R. Sorgente, S. Natale, D. Hayes, and G. Zodiatis, describes the implementation of a high resolution numerical model at the Lebanese coastal area, presents climatological results and compares the model results with a coarser resolution model (ALERMO) in which the model is nested. The paper focuses on technical details of model implementation that are widely used and described, while validation of the model performance (using available observations in the region) and analysis of the regional phenomenology are

absent or weakly presented. The authors very purely define the scientific questions and answers. Overall, the paper is weak and not appropriate for publication in the present form. I recommend that the authors significantly revise the manuscript.

Specific comments:

The “Introduction” section should include the basic background of the physical oceanography of the region under investigation. The authors only mention a series of projects carried out in the Eastern Mediterranean Sea, using observations or numerical model techniques.

The “Model set-up” section includes information on the model implementation that is already published in several papers and could be included as reference without presenting all the well-known Princeton Ocean Model equations and boundary conditions.

In my opinion, the reader is not interested in how well coarse and high-resolution models agree, but in the novel findings reached by the experiments performed. Furthermore, investigation of the regional dynamics is almost absent, and the only finding (a small anticyclonic feature) is not studied. Section 3 (“Results and discussion”) needs extensive revision, after clearly defining the scientific (or technical) questions posed by the authors. The authors should also provide validation of the model results (especially since they mention that “extensive data” exist in the region).

From figure 4, it is evident that the model did not reach the steady state.

The “Conclusion” section does not really provide any conclusion, but is rather a short summary of the manuscript.

Technical corrections:

The map in figure 1 should include both the coarse and high-resolution model domains. This will help the reader understand better the nesting procedure and the geographical information.

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Figures that compare fields should have same contour intervals (figures 6-9).

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