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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 #2

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Review of " High-resolution nested model for the Lebanese coastal area, Eastern Mediterranean: implementation and climatological runs"

By N. Kabbara R. Sorgente S. Natale D.R.Hayes and G.Zodiatis

The manuscript describes the climatological implementation of a numerical hydrodynamic model in the Lebanese coast. The model is nested within ALERMO model used also for validation.

I can not recommend the manuscript for publication. The manuscript may be suitable for publication in a totally reviewed form.

—General Comments The idea to compare nested model results with the corresponding results deriving from the nesting model in my view is wrong. In a such small area it is obvious that model solution is in agreement with the coarse model (providing lateral boundary and with the same surface forcing function). The authors should empathize the differences between the two model, try to validate and give explanation on that, showing the improvements deriving from a such numerical exercise. I strongly suggest that model results are validate using observations (i.e satellite images). The interesting result, at the present time, is the presence of a small anticyclonic structure that is poor resolved in the nesting model, probably deeper study on this structure is useful and could be the contribute of this paper to the Mediterranean scientific community.

—Specific Comments

The authors spend a lot of time describing POM and boundary conditions equations that are well known. If the authors really like to have the equations inside the manuscripts probably a table could be sufficient. In section 2.2 together with the model implementation setup there is also the comment on the forcing function that probably should be better placed within the manuscript. Giving so much details on equations the authors totally forgot to mention some very important points as the initial conditions or surface forcing function horizontal resolution.

Why surface forcing are smoothed after interpolation?

Section 4 actually named “conclusion” should be “summary” and as a consequence conclusion is missing. In figures 8 and 9 are compared fields using different colours and contour intervals. The simulation should be longer as it seems that the model does not reach a repeating cycle (fig.4 KE and salinity are steel growing).

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