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Interactive comment on "Nesting operational forecasting models in the Eastern Mediterranean: active and slave mode" *by* S. S. Sofianos et al.

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In this paper the authors have decided to inter-compare the "slave" mode approach where the higher resolution ALERMO model is periodically re-initialized from the coarser resolution MOGCM model with the "active" mode approach where the ALERMO model is initialized only once from the coarse resolution model. The fact that the "active" mode approach is not using at all any observational data to constrain the ALERMO model towards reality obscures this inter-comparison as in the active mode approach the model will inevitably drift away from reality (depending on the model error, the memory of the dynamical system, the external forcing etc.).

The finding presented in this paper that the "active mode" ALERMO experiment is more energetic than the "slave mode" experiment is to be expected considering: a)

the absence of data assimilation in the active mode approach b) the eddy suppressing surface boundary condition used in the MOGCM which directly influences the slave mode results. c) The frequent re-initialization from the coarser resolution MOGCM On the other hand the differences between active and slave mode approaches are less pronounced for the CYCOM system due to the overwhelming effect of the extended open boundaries of this system. Instead I believe that it would be beneficial for the operational oceanography community an inter-comparison between the two approaches in conjunction with observational data which have almost disappeared from this paper. I believe this is necessary step as it will make clear which of the two approaches (active/slave) is more skillful in reproducing reality. For example the abrupt change in slave mode SSS time series appearing at 15th Sept. 2004 - introduced by the MOGCM - does not show up at all in the active mode time series (fig.4b) and remains unclear which of the two results is closer to reality. Also the authors should concentrate on defining (through experimentation) the optimum time intervals for re-initialization from the MOGCM. In this sense the extension interval of two weeks discussed at the end of the concluding remarks section will be justified.

The significant differences found in the active/slave mode in the North Aegean can be largely attributed to the different parameterization of Dardanelles outflow in the two models (MOGCM versus ALERMO) as it is an important forcing mechanism for the area. MOGCM uses a rather crude Dardanelles outflow parameterization (SSS relaxation to climatology) with respect to ALERMO and in this sense the authors should attribute the differences to the different schemes used by the models and not to the active/slave mode approach.

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