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Ocean Science Discussions

Interactive comment on "Assessment of one year of high-resolution operational forecasts for the southeastern Mediterranean shelf region in the MFSTEP project" *by* S. Brenner et al.

Anonymous Referee #1

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Review of "Assessment of one year of high-resolution operational forecasts" by Brenner et al

The authors present the results of an operational forecast experiment for the Southeastern Mediterranean shelf region during the MFSTEP project. The paper is well structured and straightforward. The real weakness of the work is the missing data assimilation component of the fine-scale model, as the authors are aware of. Provided this is fine with the editor, the manuscript can be accepted after moderate/minor revision.

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The use of MFSTEP analyses (hindcasts) as a reference is probably not appropriate for comparison purposes because it also contains some error. I recommend SST and in-situ data to be used as the 'truth' and compared to: - the 3 models' forecasts - the MFSTEP analyses Taylor diagrams including biases would be a nice way to present these results.

Other comments:

- Title: should "MFSTEP" be expanded? - Abstract: it would be useful here to state that it's a 'one-way' nesting implementation - Keywords: add 'nesting' - Introduction, re field experiments: specify the years - Page 2: "driven by a switchĚ" Is this switch permanent? Some up-to-date comments/references are welcome here - Page 3: other useful refs to be added o Beckers et al Journal of Marine Systems 33-34, 2002 o Alhammoud et al, Prog. Ocean., In press - Page 3: "capture" -> "remote sensing" I guess - Page 4: four-day lead-time predictions run once per week implies a 3 days gap. Please comment - Page 5: "Ěwithin the MFSPP frameworkĚ" - Page 5: strategy: (e.g. limited selection of lateral boundary conditions etc). This is not clear and should be reformulated - Page 6: in Eq (1), I suggest U_FINE should be used instead of U_POM - Page 6: "Ěis the free surface ELEVATION" - Page 7: "1' resolution with DBDB5". Isn't that 5' ?" - Page 7: a general picture ('at a glance') of the 3 model areas, with model-type, resolution and forcing would be helpful - Page 8: SKIRON is used as a forcing for both intermediate and fine resolution ocean models? Please clarify - Page 8: "more detailed definition" Do you mean 'resolution'? - Page 8: the use of MFSTEP analyses (hindcasts) as a reference is probably not recommended for comparison purposes. SST and in-situ data should be used as the 'truth' and compared to the 3 models' forecasts. - Page 9: "which are interpolated FROMĚ" - Page 9: OGCM : Does this refers to MFSTEP? This is sometimes confusing. The same when referring to Shelf model. Throughout the text, reference to coarse, intermediate and fine models might be more appropriate. - Page 9 and figure 4: 4th degree polynomial. Why not a sinus? - Page 9: "Initial conditions are smooth". Maybe a longer/sooner spinup would

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helpĚ - Page 10: re: more difficult time producing accurate forecasts in summer. Is this a problem of fluxes or mixed layer depth? - Figure 5 should be placed before figure 4 for a more sequential reading - Page 10: What is the bias on the forecast? The RMSE does not tell the whole storyĚ Taylor diagrams are useful to plot STD, correlations and bias on a same plot as a general measure of the skill. If the bias is high, a simple bias correction sometimes improves the results quite a lot. - Page 10: re current meter measurements: What depth? - Page 10: re closest model grid point. Why not interpolating? - Page 11: the temperature is measured at what depth? - Page 11: please add a reference to the MEDATLAS data base - Page 12: it might be nice to acknowledge the people who provided the ALERMO outputs. - Figure 1: please increase resolution and quality - Figure 2 and 3: please increase the resolution of the legend - Figure 3 label: “Forecast skill compared to daily SST satellite analyses” - Figure 5: is the upper level of MFSTEP and other models 0m or sub-surface? - Figure 7: aspect ratio should be =1

Interactive comment on Ocean Sci. Discuss., 3, 2059, 2006.