



Interactive comment on “Central Mediterranean Sea forecast: effects of high-resolution atmospheric forcings” by S. Natale et al.

S. Natale et al.

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The authors thank the Referee 1 for his detailed and constructive comments, served as guidelines to improve this work. The remarks are answered below.

General comments:

We acknowledge that our original title is imprecise, stressing only different resolution of the atmospheric forcing used. We will change it in "Impact of different atmospheric forcings on Central Mediterranean Sea forecast".

We have enlarged the statistical analysis on wind stress and SST adding 2D maps of time-averaged rmse between forecasts and observation for the three ocean model

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configurations.

Standing the lack of experimental data in our possession, again we can not directly assess surface currents. We tried at least to deepen their indirect assessment improving wind stress data analysis, as explained below.

Main remarks:

- 1) We have now doubled the spatial resolution of wind stress estimates from Quikscat satellite, passing from 0.5 to 0.25 degrees. Analysis of wind stress curl has been added. Simulation results have been interpolated now on remote-sensed data grid before performing rmse calculation. We have added 2D maps of time-averaged rmse between wind stress forecasts and observation for the three ocean model configurations.
- 2) As we did for wind stress assessment, SST results from simulations have now been interpolated on satellite SST grid, and then 2D maps of time-averaged rmse between SST forecasts and observation have been produced.
- 3) When saying that SCRM results are close to OGCM, we referred to the relatively slowly-changing SST. Instead, mesoscale circulation structures are different for SCRM and OGCM, as shown for example in Fig. 6. We have clarified the text.
- 4) Experiment is limited to the period for which NH1 atmospheric forecast data were released by IASA to MFSTEP partners.
- 5) No surface drifter data are available for January 2003 in the Sicily Channel area.
- 6) We acknowledge that our terminology was imprecise. In the revised version we speak about ocean model configurations calling them "LAM2-driven SCRM" and similar, reserving "LAM2" and similar only to atmospheric models products.
- 7) We are trying to add prediction intervals estimates to our analysis, though at the moment we cannot find the suggested reference (or some other explaining the method

OSD

3, S332–S334, 2006

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for forecast fields).

8) These suggestions have been used now to improve the revised version.

Specific remarks:

Suggested improvements have been accepted and relative modifications inserted into the revised version. Just about some particular remark:

P 646, line 25-28, LAM2 & NH1 acronyms: we agreed with the nomenclature used by IASA.

P 651, line 16-end & P 655, line 3, Vortex: the Quikscat snapshot at 04:36 UTC during its ascending pass of 28 January 2005 does not show this structure. We have rewritten the text accordingly.

P 646, line 12, ECMWF dataset: the data provided in the framework of the MFSTEP project contained only pressure, temperature, clouds, wind and humidity fields.

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3, S332–S334, 2006

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