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Discussions

Interactive comment on "Marine Rapid Environmental Assessment in the Gulf of Taranto: a multiscale approach" *by* N. Pinardi et al.

Anonymous Referee #2

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Title: Marine Rapid Environmental Assessment in the Gulf of Taranto: a multiscale approach By N. Pinardi, V. Lyubartsev, N. Cardellicchio, C. Caporale, S. Ciliberti, G. Coppini, F. De Pascalis, L. Dialti, I. Federico, M. Filippone, A. Grandi, M. Guideri, R. Lecci, L. Lamberti, G. Lorenzetti, P. Lusiani, C. D. Macripo', F. Maicu, D. Tartarini, F. Trotta, G. Umgiesser, and L. Zaggia

The manuscript "Marine Rapid Environmental Assessment in the Gulf of Taranto: a multiscale approach" by Pinardi et al., is about a multiscale sampling experiment carried out in the Gulf of Taranto to collect synoptic oceanographic data over a 10-days period and subsequently study the thermohaline structure and the geostrophic circula-

tion of the area and its variability. The data analysis from the four surveys carried out in the area from 1 to 10 October 2014 provides evidence of the large scale circulation structure and associated mesoscale variability of the area consisting of an anticyclonic large scale Gyre that occupies the central open ocean area of the Gulf of Taranto and a rim current on the periphery of the gyre that undergoes large changes over the 10-days period. Overall, I found the manuscript and the work very interesting and I think that it deserves publication to the NHESS journal after some minor revisions are made according to the following comments:

General comments:

The design strategy, the methodology and the usefulness of the MREA experiment conducted in the Gulf of Taranto should be discussed more with emphasis on the usability of the MREA experiment results. In the present version of the manuscript, the authors concentrate only on the analysis of the observational data collected during the oceanographic surveys. I am also expecting to see an introductory discussion about the scientific purpose (i.e. which are the scientific questions to be answered) of conducting a multiscale MREA experiment in the Gulf of Taranto. At the same time, the authors should try to enrich the discussion session of the manuscript by adding more discussion on their scientific findings and the perspectives of their work.

Specific comments:

1. Introduction section: "A new multi-scale sampling strategy was used ..... the coastal-harbor scales of Mar Grande (Fig.1).

The authors should explain better the novelty of the approach adopted to measure the T/S structure of the Gulf of Taranto.

2. Circulation structure and data collection methodology: "From a large scale point of view ... in Fig. 2"

As the Ionian basin circulation has undergone significant interannual changes over

the period 1987 – 2013 the authors should present more evidence that the long term average of this period is representative of the hydrodynamic situation in the Gulf of Taranto in June and October.

3. T/S diagrams could be useful to depict the water mass structure of the area.

4. A more detailed discussion on the instability of the rim current is expected.

5. "Furthermore a precipitation event occurred between LS1 and LS2 which lowered the surface salinity of 0.1 PSU concomitantly changing the mixed layer temperatures of 0.5 C"

The authors should explain better how the precipitation event changed the mixed layer temperatures by 0.5 C

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