

Interactive comment on “Long-term monitoring programme of the hydrological variability in the Mediterranean Sea: a first overview of the HYDROCHANGES network” by K. Schroeder et al.

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In the following we have copied the referee's comments and our answers are in quotes.

Referee #1 The manuscript “Long-term monitoring programme of the hydrological variability in the Mediterranean Sea: a first overview of the HYDROCHANGES network”, by Schroeder et al., presents the concept and priorities of the HYDROCHANGES initiative, describes the observational network and initial results at key points in the Mediterranean Sea and attempts a first combination of the observed time series (in the western Mediterranean Sea). The HYDROCHANGES network and the dataset generated by a long-term monitoring of the hydrographic characteristics of deep waters in the Mediter-

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anean Sea can be valuable for better understanding the dynamics of the region and resolve the variability at various time scales.

Although the monitoring techniques are not homogeneous (the vertical resolution of the observations is not always well defined/explained) ...

"there is no vertical resolution, since generally it is just one point in the vertical, within the core of a certain water mass. This information is contained in the table 2 of the instruments and depths for each site, see column #6 " Installed instruments (depth) – measured parameters (* indicates which data are plotted in figures)"."

and key points are missing from the network,

"We are aware of the fact that key points are missing, and this is clearly stated in the Section 5 "Concluding remarks" from line 20. In addition we decided to stress this point also in the beginning of the manuscript (in the section 2.2 "Present status and monitored sites"), with the following sentence: "Presently (Figure 1 and Table 2) there is good spatial coverage of key regions, especially in the WMED, while only two site are fully operated in the EMDE. Besides this E-W imbalance, there other key regions that should be included in the network, in order to be more representative and useful for the description of the sea functioning and the understanding of its long term variability. Those issues are detailed in Section 5 and represent future commitments for the HC community. " "

the long-term character of the observing network can balance these planning deficits. The article is well written, with appropriate english and includes an overview of the known facts of the Mediterranean Sea circulation and water mass structure. Thus, I recommend it for publication.

I would suggest that section 3 is reduced (especially the sub-sections that are not used in the section 4 - combining the observations), since at the present form its is really very long and sometimes tedious.

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"Section 3 has been somewhat reduced, but we think that especially the series that were not used in section 4 merits not to be reduced, since otherwise they would disappear. They also are part of the network and their description is one of the objectives of the paper."

Further justification of the monitoring depths and their ability to resolve the variability of the water mass characteristics is also desirable.

"In the abstract we added a short information on this "within the core of a certain water mass". Further within each section describing the time series, we added a "justification" of the monitoring depth. In detail: Section 3.1 already contained such justification, and has not been modified (besides some small shortening here and there). Section 3.2 for each mooring we specified/justify the depth of the record, saying for which water mass it is thought for (some small shortening has been done also here) Section 3.3 and 3.4 same as above Section 3.5 already contained information on the water mass sampled, and being already shorter than the rest has not been further shortened

With regard to the ability of the records to resolve the variability of the water mass characteristics, we added the sentence " in all cases the temporal resolution of the records, spanning from minutes to a few hours, is well suited to resolve the scales of variability of concern here (long term, interannual variability)" in the beginning of section 3. "

We thank the referee for his positive comments, and hope to have modified the manuscript satisfactorily

Interactive comment on Ocean Sci. Discuss., 9, 1741, 2012.