

## ***Interactive comment on “Hydrography in the Mediterranean Sea during a cruise with RV POSEIDON in April 2014” by D. Hainbucher et al.***

### **Anonymous Referee #1**

Received and published: 22 May 2015

General comment to the Authors: The manuscript reports on physical data (+ dissolved oxygen) collected during an oceanographic cruise in the Mediterranean by means of a CTD, an UCTD and a shipboard ADCP. The objectives of the cruise are well identified, since it mainly aims at investigate the evolution of intermediate water (LIW) properties from the eastern to the western basin. This fully justifies the experimental strategy adopting ad UCTD that samples the first 800 m of the water column. I would not say that the aim of the cruise is to observe the long term variations of the water masses, since this is beyond what can be done with only one cruise, which is the topic here (you don't describe data from a time series but from a single cruise). I agree that a cruise can contribute to this, but then a more detail reference to the framework of other data should be given. Some more detailed comments are: - Abstract: I would rewrite the sentence

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at line 5 → “The objectives. . . twofold: to investigate the spatial evolution of the LIW properties and of the deep water masses in the Eastern Mediterranean” - Introduction: the authors should avoid long parts of text that were copying (however correctly cited) from other papers, but at least try to reword them (line 6-8 page 429). - Line 15 page 429: I don't think “constructed” as the correct word here - Line 5 page 430: you say that “it increases westward”, but “it” should refer to “depth”, while how it is written here “it” refers to the “depth variability”. Please reword. - Line 6 page 430: earlier you reported 550 m, please be consistent. - Line 22 page 430: replace with “Sicily Channel” as before. - Line 2 page 431: I suggest “secondly, to continue the documentation and to contribute to the understanding of” - Lines 4-12 page 431 and Lines 4-13 page 432: I agree that a reference to MedSHIP would fit in here, but since the philosophy of MedSHIP is rather different from the one of the POSEIDON cruise, you dedicate too much lines to this part. I found the reference to the 4 objectives misleading, since you mainly did UCTD that are not “full water column observations”, and only a few CTD stations were performed. It is true that an “east-west transect is especially desired by MedSHIP”, but it is intended a transect with full-depth observations, which is the CORE of MedSHIP. So I suggest to make just a brief mentioning to the MedSHIP, also to not create confusion about what are the real MedSHIP priorities and sampling strategies. - Discussion and conclusion: the whole paragraph focus on mesoscale, which was not mentioned within the objectives of the cruise. I suggest the discussion to focus on the 2 declared objectives of the cruise. - For the above mentioned reasons, I therefore do recommend publication of the ms after moderate revision.

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Interactive comment on Earth Syst. Sci. Data Discuss., 8, 427, 2015.

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