

## ***Interactive comment on “Hydrography and Circulation West of Sardinia in June 2014” by Michaela Knoll et al.***

### **Anonymous Referee #1**

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#### general comments

The manuscript titled "Hydrography and Circulation West of Sardinia in June 2014" aims to describe short-term variations in hydrography and circulation of the upper layers west of Sardinia in June 2014. The aim is to give further updated information on the area compared with previous studies to investigate long-term changes. To do this, the authors use the huge amount of data acquired during the REP14-MED oceanographic survey, carried out for 18 days from 6 to 25 June 2014 and supported by NATO. The paper is well written and describes the results on hydrodynamic data. It does not give important updates on the hydrodynamics as it mainly agrees with previous studies without analysing a particular phenomenon in detail. But its interest is mainly on the fact that it give further information on an area that, as written by the authors, "...is scarcely

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known from previous investigations". Can be acceptable for publication after minor revisions on specific comments.

#### specific comments

Two are the suggestions to improve the analyses in the whole manuscript: 1. it is not clear to me why to introduce the "new water" Temperature Minimum Layer (TML) in the wide water masses panorama as the same authors define it as "not an autonomous water mass, but consists of WIW modified continually on its way through the WMED." So I would suggest to use WIW anyway, even if it has characteristics that differ from other WIWs. If authors evaluate it is necessary a distinction then, like AW transforms in MAW during its path, I would suggest to define it as modified Winter Intermediate Water (mWIW). This would better avoid any confusion and let immediately understand of what you are speaking about. Modifications in the whole manuscript are then necessary.

2 two important papers, not mentioned here, should be considered in the comparison of water masses with historical data in the whole manuscript, in my opinion: the first paper is on water masses in the Sardinia Channel Bouzinac C., J. Font, C. Millot, (1999). Hydrology and currents observed in the channel of Sardinia during the PRIMO-1, experiment from November 1993 to October 1994. *J. Mar. Sys.*, 20, 1-4, 333–355, [https://doi.org/10.1016/S0924-7963\(98\)00074-8](https://doi.org/10.1016/S0924-7963(98)00074-8);

the second focuses on the study of LIW in the Sardinian Sea in 2002-2004 and completes other papers mentioned in the manuscript (Sorgente et al., 2003; Puillat et al., 2003; Ribotti et al., 2004) on the hydrodynamics in the area Puillat I., R. Sorgente, A. Ribotti, S. Natale, V. Echevin, (2006). Westward branching of LIW induced by Algerian anticyclonic eddies close to the Sardinian slope, *Chemistry and Ecology*, 22, S1, S293 - S305, DOI: 10.1080/02757540600670760

#### technical corrections

page 3, line 29: delete comma (,) before bibliographic reference page 4, line 3: change

"whole area" with "northern part of the area" as it is mentioned that it occurred above 39.6 °N (Ribotti et al., 2004) page 4, line 10: change 300 m in 400 m (see in Bouzinac et al., 1999; Puillat et al., 2006) page 9, line 15 and page 13, line 29: add Borghini et al., 2014. Its Table 2 perfectly fits with what mentioned in the sentences page 12, line 21: delete the whole line as it is repeated at page 13, line 1 page 13, line 10: delete "moving" as there are no permanent eddies in the Sardinian Sea

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