

Deep water hydrodynamic observations of two mooringssites on the continental slope of the Southern Adriatic Sea (Mediterranean Sea)

- Dear Author and co-authors,
The answers to reviewers have been written quickly and in poor English (i.e. A7, A9, ...) as the text added to the final version of the manuscript, which is not acceptable yet for publication. Even if the reviewers suggestion is to accept as is, I strongly suggest to revise in depth section 2.3 about Quality Control documenting each QC step (some figure could help) and relative quality flag as required by our journal. The data are visualized with filters that do not show the actual data values that a dataset paper should present (asked before opening the discussion), could you please provide an example of the original time series and of the Quality Control procedure (before and after) for CTD and ADCP?

A: First of all thanks for your comments and suggestions which have improved the quality of the manuscript.

Based on your suggestions, section 2.3 has been thoroughly revised. The quality control for CTD data has been implemented with more appropriate statistics, and figures of the quality control procedure for both ADCP and CTD data have been added. The filter on temperature and salinity data has been removed and the original time series are shown in the figures.

Also based on your comments regarding quality flags assigned to current data and the simultaneous presence of an original and a modified dataset, we decided to reload a new dataset of ADCP data (BB and FF) on the repository in which only the original current data is present side by side with the flag resulting from quality control. In the case where the current datum has a PG<80 we assigned a flag = 3 since as defined by Table 3 it is not definable as wrong datum but more as "Data value recognized inconsistent after quality control." The dataset thus composed was reloaded on zenodo and a new doi was assigned and this was updated in the paper. However within the repository there is still a trace of this change as one can see both version 1.0 which is the previous one and the subsequent update (v 1.1). The doi provided from now on always points to the latest available version of the dataset so it will always remain the same even if new updates to the dataset are made in the future with the addition of the new series from later years but with each update a new version will be formed without deleting the previous ones.

All the changes made are referred to the line number of trackchange manuscript

It follows a list of issues that have not been addressed properly.

- Lines 60-69: please check the text

A: checked and rephrased (line 60-69)

- Table 1: please improve both the table (i.e. the lines of the two sites do not correspond, the appearance is terrible) and the caption to be self-explanatory. What is S/N?

A: The table 1 and his caption was modified.

- Table 2: the calibration dates refer to time periods, i.e. 09/2013 – 04/2014 it means from September 2013 to April 2014? Would it be possible to join table 1 and 2 and provide a complete overview of the mooring sites maintenance activities? Again the caption should be self-explanatory, please improve.

A: I have changed the date of calibration with the name of the month. The caption is modified. We would prefer to leave table 2 separate from table 1 as we have made attempts but it is clearer to us to leave it separate.

- Q4 about accuracy has not been addressed properly. You talk about sensors accuracy but you then write resolution: "Data of water conductivity was measured by sensor, with a resolution of 0.00005 S/m; the water temperature by means of a thermometer, with resolution of 0.0001 °C; the water pressure by means a pressure strain gauge sensor with an accuracy of 0.002% of full-scale range." Could you please include sensor accuracy information?

A: We have added the accuracy information (line 103 and 104)

- Line 131: I would rephrase "The metadata information includes Global...."

A: done (line 138)

- Line 134: please specify or add a reference here about the conventions and keywords vocabulary used.

A: done (line 141-142)

- Lines 134-136: please check the phrase.

A: Rephrased (line 134-135)

- Lines 154-157: I suggest to rephrase "The data and metadata specified in the global attributes use the SeaDataNet parameter discovery vocabulary

A: rephrased as suggested (line 157-164)

Section 2.3 à please revise this section addressing the following issues:

- Line 159: I suggest to rephrase: "First check of ADCP and CTD data is a general screening-view;..." with "A first visual check of ADCP and CTD data time series gives a quick idea ... "

A: done (line 166)

- Line 161: Please improve this phrase and specify the out of range criteria applied: "This screening phase allows to detect anomalous values which are those out of range with the rest of the series and helps to exclude from the time series data when systems are outside the water determining the corrected start and end of the time series." Which ranges did you consider?

A: This part is implemented with more information about the screening phase (line 170-172). Because the beginning and end of the time series of the various surveys are generally very close we use the range of variability data before and after the individual series for a preliminary assessment of the congruence of the dataset.

- Line 170: Please improve, this is a suggestion: "The next data processing

A: done (line 179-182)

- "A quality flag is assigned to each observation

A: rephrased as suggested (line 185-188)

- Table 3 is not necessary since the link is pointing to the same table, do you want to keep it?

A: if is not a problem we prefer to keep it to facilitate the readers.

- Lines 174-175: "The data matrix structure explained in the metadata of the published database is composed both by data not subjected to quality control and by data adjusted after quality control."

This phrase is very confused here. At line 182 you explain that the original data are also provided with quality flag0.

A: The sentence is totally revised and the dataset now contain only the original data (184 – 188)

- Lines 180-185: All the data should be included in the time series and not deleted, quality flag are assigned in order to give the user the quality filter criteria to skip what is not matching the needed quality standards. Moreover, flag 5 is used when data value are adjusted during quality control (i.e. in CMEMS Argo data) and not changed to NaN, thus deleted. This strongly limits the data accessibility and reusability. The practice is to leave the data and assign flag 4 (bad data) if not passing your QC. The question is: what's the difference between the data flagged 1 and the original data flagged 0? The data that passed your PG80 are not modified, right? Please clarify.

A: We have changed the dataset and updated the repository following your suggestion. Only original data are provided together with quality control flag assigned for each observations on the basis of QC procedure (more explanation at line 194-197). No more filtered and original data are provided and no data are deleted from the dataset. In any case the data that passed the QC are not modified.

- What coarse errors are corrected by the SBE Data Processing™ software?

A: This sentence was substantial a generic information about SBE data processing software but not related to the real use of the software with our data. The sentence is changed at line 199 specifying the real use of the software used for data conversion from hexadecimal to ASCII.

- Spike test and gradient test did not detect anomalies. This means that the threshold set in your procedure (identical to the SeaDataNet manual, as the added text added) are not proper for your data. Usually a statistical analysis of your dataset on the property (i.e. temperature and salinity gradient) distribution and frequency is necessary to identify the proper thresholds. Could you please provide some stats and justify your choices?

A: New statistical analysis and QC more suitable to the variability of the data is implemented and added to the text (line 211-218) also with explicative figure. New citation is added in the reference list

- Line 206: you refer to the canyon site, please as I asked at the beginning refer to BB and FF to help the reader. Here your answer to my early question: please define once canyon site (BB) and open slope site (FF) and keep them in all manuscript.

A. I am sorry for failing to properly complete the editing of names in the previous revision but not a complete revision is done

- Moreover you display smoothed data and refer to mean and extremes computed from original data that are not in Fig. 2a (axis are tighter than the reported extremes), which is misleading. Same comment at line 209. How do you suggest to proceed? I also raised this issue (Q. The data are visualized with filters that do not show the actual data values a dataset paper should present.) before the discussion but nothing has changed.

A: the figure 2 and 3 are changed representing the data without filters

- Line 226: "...vertical temperature gradient is constrained around 0.05°C and 0.2°C ..." Vertical gradient is usually reported as °C/m, are you talking about the temperature differences between upper (ADCP) and lower (CTD)? Please clarify and correct eventually also in the successive data interpretation.

A: I am talking about the temperature difference. I have changed this in the text (line253-259)

- Line 262: Could you please improve the description of figure 7? Daily smoothing vs 7- day smoothing window? The caption can be improved as well. Figure 7. Time series of currents at BB site in the upper (UL) and lower layer (LL) of the water column: (a) speed, (b) east, (c) north and (d) vertical components. The data for a better visualization are presented with a 7-day smoothing window

In the text I specified that the filter was chosen for better visualization of the data, and the original one is shown in the figure above (Ex. 8a). The image is mainly made to bring out the variability between the layer closer to the bottom and the upper layer. this information was added in the text (line 288-293)

- Data Availability à please indicate the full link <https://doi.org/10.5281/zenodo.6770202>

A: The new doi is updated and the full link added in the text (line363)

- Line 340: "The dataset presented conclude in 2020 but monitoring activities are still in progress and future data collected by these stations will be added to an updated version of the repository as advancing of the data collection to convey the progress of oceanographic observations to the scientific community." Could you provide a data update strategy/frequency? i.e. yearly? every 5 years?

A: I added a sentence about the intention to update the dataset every 2 years (line 370)

- Figure and Table captions can be improved to be complete and self-explanatory. Here a couple of suggestions (in section 3.1 BB and FF do not appear, then they are used in 3.2!! Please harmonize):
Figure 2: ADCP and CTD temperature records at two mooring sites: (a) BB on canyon (600m depth); (b) FF on the open slope (700m). The data are presented with a 3-day smoothing window

A: done

- Figure 3: ADCP Salinity records on the two mooring sites BB and FF

A: done