General Comments:

The paper is presenting an 8-years dataset of temperature, salinity and current meter measurements from an observatory with two moorings along the continental slope of Southern Adriatic Sea for the study of the deep water masses dynamics. The moorings are equipped with ADCP and CTD probes and are part of an experiment set up in Italy after an extremely cold winter at 2012. The experiment funded by a flagship national Italian project and provided so far unique data and knowledge about the hydrodynamics and thermohaline properties of the last 100m of the water column. The instruments used in the experiment are maintained and the collected data are quality controlled. The data files are in an open data format (NetCDF) and are compliant with the FAIR principles but a CTD dataset is not complete and should be corrected. The two moorings are in operation until today and since 2021 are part of the EMSO-ERIC infrastructure. Below is a list of issues to be addressed before the publication of this paper.

Specific comments:

1) It is undoubtedly a unique and useful data set to understand the complex hydrodynamics at the area and I would like to read a few more sentences on the advantages of the long-term high resolution monitoring approach as adopted by CIESM and other networks today. In addition, how other projects or activities can benefit from this data set.

2) Although it is mentioned that the two mornings have joined now the EMDO-ERIC infrastructure, I would suggest authors to provide some more information (such as links or references) showing that these data are integrated in EU data systems. This would enhance their FAIRness because through these systems the data are re-usable by many users and applications. Maybe such links are already included in the references but I could not find them.

3) The second section describes the configuration of the observatory and mentions that every 6 months there is a recovery of the instruments for maintenance. I would suggest authors add here few sentences explaining what maintenance includes because not all readers are familiar with field collection practices. For example, does maintenance includes sensors calibration and biases fixing for both CTD and ADCP? For which parameters? Stressing the importance of such maintenance activities would show more clearly that the long term monitoring data are of high quality and accuracy and this is very important when someone is trying to detect variabilities in long-time scales.

4) At the CTD probe description (line 91) it says: "accuracy of ± 0.1% of full-scale range". I would like to read here what does it mean and why this is important for the T,S data accuracy. In the next sentence, isn't the phrase "The available resolution for conductivity is ± 0.0005 S/m, ± 0.005 °C for temperature" a repetition of the previous sentence?

5) Section 2.2 (metadata description), I could not find any metadata report on Dataset Information (DI) and Variables in Dataset (VD). Is by DI and VD is meant the attributes inside the NetCDF files? If so, please clarify and explain in the paper accordingly or better use terms like attributes instead of metadata report.

6) At the same section 2.2 for metadata, it is not only the DOI that make data FAIR. The scope of the journal is to highlight and emphasize the quality, usability, and accessibility of the datasets. Therefore, it would be useful for the readers if authors could expand more the components that make this data set FAIR for example F:DOI, metadata; A: zenodo, other data portal or tools?; I: open format like NetCDF and std vocabs; R: open and well described data.

7) At the end of section for data, metadata it is mentioned that standardized vocabularies are used. Could the authors include which vocabs they use ?

8) The Data quality check section should be changes to 2.3.

9) In the above section, please mention what tools are used for the quality control. Are these "in-house" made, commercial or other tools? Are these tools open and shareable? This info could also improve the FAIRness of the dataset.

10) Concerning the quality checks, is there any comparison with existing data or climatologies at the area? Do you plan to include such checks in the future releases of time series? Such comparison are basic components of a QC which helps also to find errors at the data due to instrumental biases. It is a key activity to evaluate the quality of the data and I would suggest authors to include such comparisons in future releases.

11) Line 142: Add here the Table 2 reference. There is no reference for Table 2 in the document. Also add a reference for (SeaDataNet, 2010), for example https://www.seadatanet.org/Standards/Data-Quality-Control.

12) Line 156: By checking the data I understand that the bad data (flag=4) are removed from the published at data set at zenodo. I would suggest to keep these values in the published data set so as the QC can be repeated in future (perhaps with other thresholds). In this way you ensure the re-producibility of your data and of your scientific results making thus your data more FAIR.

13) At the start of the Data availability section, why do you use 2 different links ? They end at the same web page.

14) The text fonts at the left axis of mooring sketch at Figure 1 is not very distinctive. If it is feasible to increase the fonts, it would be useful.

Comments on data files

15) I could not find filtered variables in the CTD data NetCDF files, only raw data (cond, temp, psal). The included psal_qc, temp_qc are the quality flags and not the filtered variables. The data files should be corrected and reloaded at zenodo.

16) If only good data are kept (flag=1), why the salinity flags at the CTD files as well as the temperature flags at file BB_600_CTD.nc are 1 and 9 ?

TEXT editing and improvement

17) Line 18: I think the term "dynamics" is more correct (e.g. "Adriatic deep-water dynamics" instead of "Adriatic deep-water dynamic".

18) Line 19: delete "since 2012".

19) Line 30: Change "figure" to "Fig." as the journal guidelines require (Figure composition).

20) Line 32: change "indicates" to "indicate".
21) Lines 40, 41: merge the two lines.
22) Line 44: I do not find the reference "Gačić et al., 2002". The same for references "Civitarese et al., 2005" at line 45, "Mihanovic et al., 2013" at line 60. "Vilibic and Supic, 2005" at line 265.
23) Line 49: Is there any project link available to be added?
24) Lines 58, 59: merge the two lines.
25) Line 61: change "Carniel et al. 2016" to "Carniel et al., 2016"
26) Line 63: delete the dot before the word but
27) Line 64: change the "broadens" to "broaden" and add a dot at the end of the sentence.
28) Line 65: What is the IFOM? I think authors could add a list of all acronyms used because not all acronyms are given at the paper.
29) Line 65: "provides" instead of "provide"
30) Line 66: I am not a native English speaker but I think "a unique observatory" instead of "unique observatory" would fit better.
31) Line 76: the link does not work.
32) Line 77: change "Figure 1b" to "Fig. 1b".
33) Line 90: delete one of the two dots.
34) Line 146: add a ":" after the parenthesis.
35) Lines 147, 151: add a comma at the end of the equations.
36) Line 160: change "Figure" to "Fig. 2". Same at lines 169, 177, 179, 191, 206 (x3), 208, 209, 227, 231, 233, 241.
37) Line 162: change "et al." to "et al.,". Same at lines 256.
38) Line 265" change "et al," at "et al.,".
39) Line 276: separate the "answerwill".
40) Page 15, Figure 4: change the x-axis of (b) panel from "Year" to "Temperature (^{o}C).
41) Line 45, Table 2: the list is not complete. Authors could modify the caption to indicate that these are the relevant codes to this work. Authors could also add a link also of the SeaDataNet L22 QC flag scheme, as L22 has been updated since 2010 the SeaDataNet guidelines were published.