

Interactive comment on “Hydrodynamic variability based on the multi-parametric POSEIDON Pylos observatory of the south Ionian Sea” by D. Kassis et al.

Anonymous Referee #1

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General comment.

The paper shows the most recent results about the hydrodynamic variability detected by the POSEIDON Pylos observatory in the south Ionian Sea since 2008 up to 2010.

The analysis is based on temperature and salinity time series from the surface down to 500 m depth. The variability of such parameters is also put in relationship to atmospheric forcing and changes in water masses.

The overall manuscript is concise and underlines the importance of in-situ multiannual observations in order to improve the knowledge about the ocean variability in an area characterized by a very complex hydrology, the Ionian Sea.

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Nevertheless, I have a number of observations, both general and more specific that should be addressed before considering the paper ready to be published.

1) The paper presents a description of the POSEIDON-Pylos observatory with some technical details that can be irrelevant to the objective of the work which is only focused to the hydrodynamics down the water column.

2) The first part (paragraphs 1-3) of the paper and the second one (paragraph 4) seem to have different style of writing.

3) Section 2.2 seems to be not so suitable for the objective of the work to be considered a separate paragraph, thus the suggestion is to consider only one section about the overall system description avoiding technical details.

4) Table/Figure references. In many parts of the manuscript sentences like "table below, following figure" are used: please, this should be avoided using directly the number of tables and figures as Figure 1, Table 1 etc..

5) Bibliography. 8 references are cited in the whole paper whilst 38 are listed...: please adjust this incongruity.

6) Style of figures. The style of figures and captions changes from one figure to another. A great effort must be made to make the formatting of the figures more uniform. For example:

Most of the figure seems to be extracted from presentations (Fig. 3), working or technical documents (i.e., title of Fig. 15 is "dT/dt" which is, of course, understandable but not so nice in a paper!; Fig. 18 was produced using another tool with respect to the others showing the data).

Fig. 4 has no title.

In some figures, title is written with capital letters only for some words and not for some others.

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Some captions contains the period of time the time series is referring to, some other not.

7) Number of figures. In general, some figures are only a merely duplication of some others although with a different visualization mode (Fig. 10 is the contour plot of potential temperatures shown as time series in Fig. 9; Fig. 12 is the contour plot of salinity shown as time series in Fig. 11) or with less data (Fig. 16 and Fig. 19 show subsets - near surface, mid-depths, respectively - of the same time series of Fig. 11; Fig. 17 and Fig. 20 show subsets - near surface, mid-depths, respectively - of the same time series of Fig. 9). Please, consider to avoid duplication of plots with the same data.

Below other more specific comments.

Page 884

lines 11-13: Should be rephrased: "in combination with atmospheric, currents buoy measurements and CT profiles" is not clear. It might be changed with "in combination with atmospheric and currents measurements collected by instruments installed on the buoy and CTD...".

line 15 Use temperature and salinity instead of "T & S". Abbreviation should be introduced at the first use and in any case used in the Abstract.

line 21: I suggest to use year(s) instead of "yr" here and in all other occurrences.

lines: 24-27: Avoid the use of very similar words in the same sentence (i.e., composed, components, system).

Page 885

line 7: Use "have become part of" instead "have become a part of".

line 8 Correct the misspelling "OcenaSITES" with "OceanSITES".

line 16: Use "tsunami" instead of "Tsunami" here and in all the other occurrences.

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Page 886

line 1: Specify if "Theocharis et al, 1999" is referring to "Theocharis a" or "b".

Page 887

line 9: The specification "(size limitation)" may be not clear to the general reader. Please, clarify the concept (i.e., ... of the sea waves is not transmitted since the available bandwidth doesn't allow the transmission of long packet of data." or omit. lines 14-15: Should be rephrased: "the data can be recovered during the maintenance missions when the sensors are recovered" contains duplication (recovered). You may consider to use "the data are downloaded from the internal memory of sensors recovered during the maintenance missions".

line 15: Correct the misspelling "data is" with "data are".

Page 888

line 11: Use "processes" instead of "procedures".

Page 889

line 13: Insert a comma before "etc.".

Page 890

line 5: Used "eight" instead of "8".

lines 9-12: Delete the sentence starting with "The transfer function" and add the reference to equation 1 to the sentence starting with "A low-pass".

Page 891

lines 10-13: This sentence ("All direction data ...") should be used as caption for Figures 5, 6, 7, 8.

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line 6: Explain the acronyms T, S and $\sigma\theta$

line 16: Change "militates"

line 18: Use kg instead of Kg

line 24: Insert the unit at "isopycne of 29"

Page 893

line 9: Use "at the beginning of August" or "early August" instead of "at the start of August".

line 12: Don't use the capital letter for "density".

Page 894

line 2: Add the unit (PSU) to "(>38.9)".

Page 900

Table 1: In the third row of the "Accuracy" column use the unit " $^{\circ}\text{C}$ ".

Page 901

Table 2: In line 2 use "potential density" instead of " $\sigma\theta$ ".

Page 904

Figure 3: In box Check 1 delete the space between "measuring" and "the values". In box Check 3 explain "Const*STD" or omit it and use "flags 3&4" instead of "flag 3 & 4". In box Check 4 add a comma before "etc" and replace "are consider" with "are considered". In the caption use "applied to" instead of "applied on".

Page 905

Figure 4: Rephrase the caption with "Air temperature variability in 2008-2010".

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Figure 5: Add "in 2008-2010".

Page 907

Figure 6: Add "in 2008-2010".

Page 908

Figure 7: Add "Surface" to the caption. Consider to set the limit of the vertical axis to -60...+80 to slightly improve the quality of the data view.

Page 909

Figure 8: Omit "here" in the parenthesis.

Page 910

Figure 8: Replace "in" with "at".

Page 912

Figure 11: Replace "in" with "at".

Page 914

Figure 13: Replace "in" with "at".

Interactive comment on Ocean Sci. Discuss., 10, 883, 2013.

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