Journal: OS
Title: An integrated open-coastal biogeochemistry, ecosystem and biodiversity observatory of the Eastern Mediterranean. The Cretan Sea component of POSEIDON system.
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General comments

The present manuscript aims to describe the current POSEIDON observing system (OS) in the East Mediterranean Sea which is based on multi-platforms and multi-parameters approach. The actual status of this OS is composed by coastal and open sea eulerian and lagrangian platforms (gliders, Argo floats, Ferrybox, moorings and buoys). This OS delivers variables which are essential to understand and predict the impacts of climate change and anthropogenic pressure on marine ecosystems in the Eastern Mediterranean Sea.

The manuscript is well written but some parts are missing and some parts should be re-organized.

The section 2 is too long and it should be reduced. The authors should do a rapid state of arts of the situation in the eastern basin and describe the main characteristics of the basin (why is it important to implement and sustain an integrated OS in this region).

In the section 3, the scientific questions, which are the backbone of each OS, should be detailed in the first part followed by the management aims and services.

In the section 4, the personnel section should be moved after the section 4.9 otherwise this is confusing to see the personnel skills between the description of Ferrybox and Argo floats. In this section, there is no description of the POSEIDON buoys used for forecasting products. Why ?

After the data description in the section 5, a section on data analysis and data quality control is largely missing: How real-time data are managed ? Which protocols are used ? How the delayed mode data are adjusted ? Is there different correction levels (as for the remote sensing data) ? For example in Tables 1, 2 & 3, the authors should add some information on correction methods applied for each variables. In the same way, accuracy and measurements frequency should be added in these tables.

An additional section on the POSEIDON management and governance is missing too: who decide the choice of variables ? sensors ? how the new scientific needs are taken into account ? for example nowadays, global OS are focusing more and more on biological variables for marine ecosystems change (e.g. genomics). What is the vision of the POSEIDON group on this question ?

Regarding the scientific production, which is depending on the POSEIDON OS sustainability, how many publications, thesis, reports have been produced ? Any information regarding the DOI dataset statistics should be also included (at least on annex) to demonstrate the importance to maintain such OS.

Finally, a description and figure on integrated results from the different POSEIDON components are missing. This should prove the necessity to implement an integrated and multi-variables OS but also it will stress what are the actual gaps and needs.

Ancillary comments

The word "parameter" is often over-interpreted. A distinction with variable should be addressed here. Parameters are not natural quantities, variables are. A variable is an entity that changes over time or depth: this what we are measuring. In general, parameters are "constants" that define a specific instance of a general equation that is based on variables. That's why we used the term EOV for Essential Oceanic Variables.

"Biochemical" should be changed to "biogeochemical"

Figure 1
Information is missing regarding the glider endurance lines, the Argo floats observation area, the sediment traps deployment, etc… A new figure should be proposed with the names of seas, straits, main countries, …

Figure 3
This is not very clear and too small. It should be modified or removed

Figure 4
To better illustrate the physical and biogeochemical variabilities in this region, different time series should be shown here (not only TChla). For example, T, S, O_2, …

Figure 6
This figure does not bring anything. It should be at least merged with an ocean color remote sensing map or something else.

A figure on mooring dataset variability should be included too