

# Interactive comment on "The AlborEX dataset: sampling of submesoscale features in the Alboran Sea"

Anonymous Referee #3

## Major comments

- What are the instruments specifications? A list of the parameters measured by each platform along with the corresponding sensor name must be provided for the CTD, glider and profiling floats.

The instrument specifications have been added in the manuscript: for each platform, a subsection "*Configuration*", containing the information about the platform and variables, has been added.

- Were they any water sample taken during the cruise in order to calibrate the CTD, or chlorophyll-a fluorescence? More than four years after the experiment, I expect this calibration to be done. These are mentioned p16 l22. Along the same lines, a list of future QC to be applied is advocated p15. I would be reluctant to use such a data set. My conception of publishing a data set in such a journal is that final QC should be performed beforehand, and future users should not worry about it.

You are right, water samples were collected.

The CTD data calibrated using the bottle data are available as a new processing level called `L1_corr`, and now described in the manuscript. Concerning the chlorophyll-a fluorescence calibration: it is correct that the calibration has not yet been performed. The decision to publish the data in the present state comes from a balance between:

- The will to share as soon as possible that dataset with the research community interested in the submesoscale, knowing that articles using the dataset have already been published.
- The need to have the best quality for the dataset.

Even if there may still be room for improvement in terms of quality control, for instance by creating new quality checks, our conviction is that the dataset in its current state is mature enough to be employed by other researchers

- Section 2.2.2: It is never specified that the gliders were set to surface every 3 (deep) and 10 (shallow) dives. Estimates of depth-average currents by gliders between consecutive surfacing should be mentioned. Those are essential to infer geostrophic velocities. The sampling strategy unfortunately divides by 3 and 10 the number of current estimations. What was the aim of this sampling strategy? Moreover, when the glider does not spend equally distributed time at each depth level, depth-average currents can not be treated as such anymore. How

does the QC deal with this issue? To my mind, this is a real weakness of the glider dataset, especially in an experiment dedicated to submesoscale. I discovered this point by looking at the glider data. Readers should be made aware of this in the manuscript.

Thanks for mentioning this issue. It is indeed something that was not properly addressed in the initial manuscript.

We also believe that it is essential

- to have measurements near the surface to tackle oceanic processes and
- the highest frequency of profiles near the surface in order to properly estimate the depth-integrated velocity.

The reason why the gliders did not go to the surface for every profile arises from safety concerns: the intense marine traffic (see for example the density maps of MarineTraffic) and the existence of a Traffic Separation Scheme (TSS) near the sampling area were taken into account for the decision to limit the glider surfacing.

We added a paragraph in the subsection "*Configuration*" with the "*Gliders*" section:

Added text:

Due to safety concerns, both the deep and coastal gliders had their surfacing limited: the deep glider came to the surface one in every 3 profiles, while the coastal gliders came out one in every 10 profiles. While this strategy does not appear optimal in a scientific point of view (loss of measurements near the surface, meaning of the depth-average currents), the priority was set on the glider integrity.

- Section 3.3.2: How in-house QC differ from international standard for profiling floats and gliders?

In-house quality control are in fact based on international standards. The idea is not to reinvent the wheel but to use what already exists and add other contributions whenever possible. All the QC are detailed in:

QUID\_DCF\_SOCIB-QC-procedures.pdf

SOCIB Quality Control Procedures  
Data Center Facility  
September 2018  
DOI: doi:10.25704/q4zs-tspv

and the quality control is re-organised as follows:

1. A general section explaining the approach for the quality control.
2. For each platform, a sub-section describing the specificities in terms of QC.

As all the procedures are explained in the aforementioned document, for the sake of conciseness, we prefer to keep a summarised version in the manuscript.

## Specific comments

p2 l32 "thanks due"

corrected

p6 l2: Specify the glider type and sensors

**Coastal:** Teledyne Webb Research Corp. Slocum, 1st generation, shallow version (200 m)

**Deep:** Teledyne Webb Research Corp., Slocum, 1st generation, deep version (1000 m)

This information is now included in Table 3 in the subsection "*3.2.1 Configuration*" related to the Gliders, along with the sensors and other technical data.

Overall, the descriptions of all the instruments and sensors have been extended and improved.

p10 l1: wrong degree symbol, please also correct other instances.

Corrected