

Bensi et al., present an interesting oceanographic dataset collected along the Sabrina Coast, nearby the Totten Glacier. This dataset can contribute to future oceanographic studies in this specific area as well as to basin scale studies. In my opinion this data description paper is well written and easy to read. Data acquisition methodology is well described, and data are easily accessible through the provided link. The authors also provide some analysis of the data, offering hypothesis and discussion points. As one of the strengths of this dataset is the scarcity of previous oceanographic data in the area, I suggest adding a new figure where the spatial distribution of the previously available data is compared to this new dataset.

*Answer: We thank the reviewer for her/his comments and suggestions provided, which we incorporated into the revised version, as detailed below. In particular, we have worked in the direction of providing a version of the paper that includes more references, improved figures, and some revised parts of the text. According to the Reviewer's suggestion, a new version of Fig. 1 now includes the spatial distribution of other available data.*

I have some minor comments that are reported below.

Line 15 "The main water masses of the area"

*Answer: Corrected*

Line 19 Please resentence in order to simplify

*Answer: the phrase was re-formulated. Now it is stated as follows: "The latter (here we refer to AABW) is a mixture of dense waters from the Ross Sea and Adélie Land continental shelves. They are influenced by the mixing processes they undergo as they move westward along the Antarctic margin, also interacting with the Circumpolar Deep Water (warmer and saltier).*

Line 33 depends

*Answer: since the verb refers to "Earth's climate processes as well as their future projections", we left the verb in the original form, i.e., "depend".*

Line 60 Use the acronym for Sea-level equivalent

*Answer: Corrected. SLE added in the text*

Line 119 is the CTD equipped with a pump?

*Answer: yes it is, it was a SBE9 plus V2 (pump-controlled) .*

Line 125 Did you apply the standard CTD data treatment procedures?

*Answer: Standard data processing and quality controls are reported in the mentioned reports, released by CSIRO Marine National Facility ([https://www.cmar.csiro.au/data/reporting/get\\_file.cfm?eov\\_pub\\_id=1512](https://www.cmar.csiro.au/data/reporting/get_file.cfm?eov_pub_id=1512)). In*

*particular, CTD data processing was completed using CapPro processing software (Matlab software), version 2.9.*

Line 125 “Particular attention” I think this is a repetition of what previously stated

*Answer: the reviewer is right, now it was corrected*

Line 131 Is the 0.002 psu an arbitrary target? Is it based on some bibliography?

*Answer: 0.002 psu is indicated as a standard accuracy within the requirements of Global Ocean Ship based Hydrographic Investigations Program (GO-SHIP). Technical notes from SEA-BIRD (<https://www.seabird.com/asset-get.download.jsa?id=54663149001>), instead, indicates initial accuracy for temperature ( $\pm 0.001$  °C) and for Conductivity ( $\pm 0.0003$  S/m).*

Line 147 Please describe how MODIS images are used in the manuscript

*Answer: more info has been added in this section. Now it is stated as follows:*

*Finally, satellite images (MODIS - Moderate-resolution Imaging Spectroradiometer, Corrected Reflectance imagery) are used to highlight both the evolution of sea ice within the period covered by the IN2017-V01 cruise and the presence of the Dalton Polynya (Fig. 2), the open water surrounded by sea ice in the vicinity of Totten Glacier and MUIS. This is one of the largest Antarctic coastal polynya, with its wintertime average area of  $3.7 \pm 2.0 \cdot 10^6$  km<sup>2</sup> ( $6.5 \cdot 10^6$  km<sup>2</sup> at the time of the cruise; Fig. 2b,c), extending in the prevalent downwind direction (see e.g., Arroyo et al., 2019).*

Line 166 Please check symbols

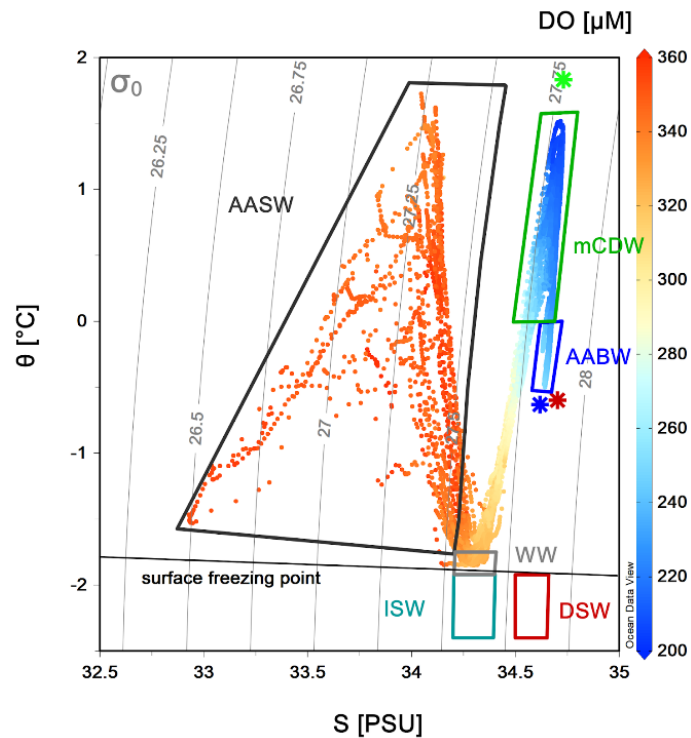
*Answer: checked, it was a problem occurred during pdf conversion.*

Line 182 Is the mixing the only possible process for this?

*Answer: yes, we are confident that the water masses observed in our study area are a product of mixing that changes their original characteristics. However, there are several processes, such as combined effects due to along slope flows, eddies, internal waves and tides, downslope density-driven currents, which can involve local water masses and trigger their mixing. We now better stated this fact in the summary and conclusions.*

Figure 3 Please consider to use bigger dots for data

*Answer: Figure 3 has been updated now, using bigger dots and showing endmembers for main water masses.*



Line 194 “a wide range of temperature and salinity”

*Answer: Corrected*

Line 195 use acronym for Winter Water

*Answer: Corrected*

Figs 4,5,6,7,8 Consider to add a map of the station to these figures

*Answer: A map was added to these figures.*

Fig 4 Why are you not using longitude for the x axis?

*Answer: In this representation, using longitude instead of distance on the x-axis would have caused the interpolated data to overlap, especially between points BC and DE, since the section does not zonally displace itself by crossing only longitude.*

Data Availability here The direct link to the data, as reported in the text would be useful

*Answer: The direct link to the data was added  
 ([https://www.marine.csiro.au/data/trawler/dataset.cfm?survey=IN2017\\_V01&data\\_type=ctd](https://www.marine.csiro.au/data/trawler/dataset.cfm?survey=IN2017_V01&data_type=ctd))*