Ocean Science
Discussions

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comment

Interactive comment on "The CORA 5.2 dataset: global in-situ Temperature and Salinity measurements dataset. Data description and validation" *by* Tanguy Szekely et al.

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In the discussion, the reviewer has emphasized the interest of the paper. He moreover asks to establish a link between the present study and the climatology published by Gouretski et al, 2018 (G2018). G2018 implements an objective analysis method to historical oceanographic measurements to produce a climatology for 1900 to 2015. Most of the measurements G2018 incorprates for the period 1950-2015 are available in the CORA dataset since the CORA dataset is fed by the world ocean database. G2018 differs from the CORA database in that the quality control performed before the objective analysis is fully automated. The comparison of the G2018 and CORA

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[Discussion paper]

in term of the number of flagged data and how the differences in flagging impacts the metrics we present in this paper would be very instructive. It would however not been complete without a discussion of the different objectives of the two datasets : providing a most complete set of qualified profiles for scientific studies for CORA whereas G2018 is aimed at producing reliable and robust climatologies and integrated metrics (GOHC for instance). We have chosen not to pursue this comparison as far in order to avoid the pitfall of changing the scope of the present study from describing a new dataset validation method with a metric to estimate the validation process gains to comparing the CORA dataset with others datasets. We have however cited G2018 in the quality control result section to highlight that the amount of flagged profiles is considerably lower using the CORA processing than using G2018 automated methods.

The second point discussed by the reviewer is how we can justify that the CORA dataset in not over flagged. We did not manage to back this conclusion with more evidence. As a result, we have moderated the conclusion of the section Âń CORA quality control results Âż mentioning that we are not able to provide conclusive evidence. There is, indeed, no reference dataset available with only good quality measurements and a global coverage. The comparison of the CORA dataset mean variance variability with the variance variability estimated with other datasets, such as WOD or EN4, is interesting but the difference on the variability level observed then is still insufficient to declare if a dataset is over flagging or not. This particular topic is obviously beyond the scope of this study and will not be developed in the present paper.

Last, the reviewer has pointed out many typos in the original draft. These typos have been corrected and some sentences have been redrafted to ensure a concise and clearer text.

The following points have been raised by the reviewer and corrected in the text.

p 2, l 5-7 : three times "scientific community" - boring, please reformulate

- The sentences have been reformulated

p 2, l 23 : timeseries→time scales

- Changed in the text

p 2, l 25 : Baseline→baseline

- Changed in the text

p 4, l 92 : barely→slightly? I am not sure what you want to say.

- Changed in the text. The point was to show that the dataset evolution is driven by the improvements in the oceanographic measurement instruments.

p 4, l 96 : barely maintain a plateau at 20%→reach a plateau just below 20%? Again Iam not sure what you want to say.

- Changed in the text

p 5, l 125 : for each of the test described in this section a reference should be given sothat the interested reader can easily find more information about the test - whatdoes it look for, what are acceptable parameter values to be used in the test, howdoes it perform, etc.

- The test description have been improved.

p 5, l 131-133 : spike in what variable? From the description it seems to be a spike indTdz,but that's not clear from the text. Please explain.

- Done

p 5, l 141 : possible measurements→possibly correct measurements?

- Changed in the text

p 5, l 148 : who→which

- Changed in the text

p 6, l 179+180 : âŮęPSU→PSU

-Changed in the text

p 7, l 191 : what do you mean by '"hedgehog" type profile'? spiky?

- Description improved in the text

p 7, l 197 : vas→was? or is?

- Changed in the text

p 7, l 206 : reinforced→increased

- Done

p 8, l 232 : If there is a subsection 5.1, why isn't there a subsection 5.2?

- Removal of the 5.1 subsection title

p 8, l 239 : lead in→lead to, or: result in

- Changed in the text

p 8, l 244 : ocean flags→ocean quality flags into account. Apart from this, the sentenceis hard to follow and should be reformulated.

- Changed in the text. A better description of the QC flags is reported on page 5, l 122-125

p 8, eq. 1 : definel(i, j)andL(i, j)

- Done

p 9, eq. 2 : defineTp

- Done

p 9, l 295 : differs from→differ by

- Changed in the text

p 9, l 301 : what is GTSPP? GTS is mentioned before, but what does PP stand for?

- Updated description

p 9, l 302 : erased→deleted

- Changed in the text

p 12, l 396 : insolation→insulation

- - Changed in the text

p 12, l 404 : contrary to what is stated here, fig. 9 only shows T

- Changed in the text

p 13, l 424 : as close as possible from the physical measurement→as close as possibleto the physical measurement - I am not sure, perhaps better to reformulate thesentence.

- Sentence reformulated

p 13, l 438 : something is wrong with the end of this line

- Sentence reformulated

Figures : in all figures the labels are too small. I cannot read them.

- Improved figures

Fig. 2the colour scale is counter-intuitive. Low values should be blue and high valuesred.

- The blue and red colors are not related to the low values or high values of the figures. They have not been changed.

Figs. 7+8why not combine these figures into one?Figs. 9+10why not combine these

figures into one?

- The document layout seems to be more clear with splitted figures. The comment have not been taken into account.

Please also note the supplement to this comment:
https://www.ocean-sci-discuss.net/os-2018-144/os-2018-144-AC1-supplement.pdf

Interactive comment on Ocean Sci. Discuss., https://doi.org/10.5194/os-2018-144, 2019.