

# ***Interactive comment on “Near-ice Hydrographic Data from Seaglider Missions in the Western Greenland Sea in Summer 2014 and 2015” by Katrin Latarius et al.***

## **Anonymous Referee #2**

Received and published: 22 January 2019

In this manuscript the authors present temperature, salinity and drift data collected using autonomous Seagliders in two consecutive summers (2014 and 2015) near the ice edge of the East Greenland Current (EGC) and the western Greenland Sea in the upper 1000 meters. The effort was a part of the “Variation of freshwater on the western Nordic Seas”-project. The manuscript also contains a detailed presentation of the data processing steps and a brief description of the observations. The final data sets are easily accessible through the link provided. The EGC carries freshwater from the Arctic Ocean into the Nordic Seas and to the northern North Atlantic; regions with open ocean deep convection. High quality, multi-year data from this, rather inaccessible, region is of interest to the scientific community. However, I suggest the following revisions be

C1

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made.

Specific comments: Overall, the usefulness of the data set to the scientific community should be discussed to a much larger degree. Also, is there other data that this dataset can complement? Are there any references in connection to the project “Variation of freshwater on the western Nordic Seas”?

When describing the glider set up in 3.1 you could mention the pre-deployment tank tests and the sail specifications here.

Although the different steps in the data processing are thoroughly explained, I suggest looking over the structure of the presentation of the data processing and data quality (3.3 and 3.4). While I can understand the reason for structuring it this way, I found it made me go back and forth between these sections a lot trying to make sense of what happened when.

When reading about the individual corrections (below B.7 in section 3.3) it is not clear to me what this actually included (everything mentioned in the bullet points? or some?), there is some more information in 3.4.3 which might have been useful to know when reading the previous section, but it’s still not very clear. What criteria were used to determine which data were erroneous in the different bullet points e.g. regarding outlier profiles, wrong values, large gaps etc.?

Row 334 - have these spikes been clearly flagged so that they can easily be taken into account when someone is using the data set? Or is it likely that they were removed in another processing step after A.6?

Rows 337-339 - so why was this method not used here?

I would suggest a paragraph at the end of section 3 where the authors summarize and discuss the quality of their processed data and how the data could be used (or should not be used).

Please add a conclusion at the end of section 4.

In the online data product: I suggest not changing the Operation number to NA in the "drift"-files. I understand that it is because there is no hydrography parameters available for that dive, however I suggest adding another column instead to flag this.

The number of dives for glider 127 in 2014 seems to be 258 in the online file, but is listed as having 220 dives in Table 1.

Technical comments: Row 55 should have commas around "both liquid and frozen"

Row 58 should be "low salinities were frequently observed"

Row 105 and 107 "is flowing" should probably rather be "flows"

Row 122 and 123 "his" should be "its"

Row 130 "support the realization"?

Row 135 too many "the"

Row 153-156 wrong line spacing

Row 184 "have been" should be "were"

Row 185 "already beginning of" should be "already in the beginning of"

Row 194 "the maps base on" should be "the maps are based on"

Row 208-209 – perhaps swap the two URLs to give better line break? Looks odd now

Row 213 and 214 "data of" should perhaps be "data from"?

Row 218 "track or" should be "track, or"

Row 226 Title needs rewording

Row 229 "follows basically" should be "basically follows"

Row 231 "miss-alignment" should be "misalignment"

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Row 239 “byt” should be “by”

Row 257 “sampling rate information” should be “sampling rate, information”

Row 259 “cell but” should probably be “cell; instead” or similar

Row 281 “It was also analyzed if” should be “An analysis was also made to determine if”

Row 281 “show” should be “showed”

Row 282 “if they can be used both or not” should be something like “if both could be used or not”, or perhaps “which of them, if any, could be used” or something similar.

Row 289 – “divice” should be “device”

Row 291 Insert blank line On page 14-15, the “individual steps of table 2” (there are no row numbers here) In B.4 “interested to analyze” should be “interested in analyzing” In B.5 “iterative” should be “iteratively”

In B.5 “This is other than” should be “This is different from” or “This works differently than”

In B.6 “Fortunately for none of the missions reported here, systematic differences between down and up-casts were visible.” should be something like “Fortunately, no systematic differences between down and up-casts were visible for any of the missions reported here”

Row 322 “if conductivity laged temperature” should be “if conductivity lagged behind temperature”

Row 325 “not successful at whole” should be, depending on what the intended meaning is, be something like “not successful overall” or “not successful at all times” or possibly something else.

Row 333 “hereupon” should probably be “therefore”

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Row 391 “the criteria of stable density was applied” should be “the criteria of stable density were applied”

Row 394 “exemplarily” means “In an exemplary manner; ideally, admirably” – so “again exemplarily for glider 127 during the mission 2015” should be changed to something like “where again glider 127 during the mission 2015 is used as an example”

Row 408 “and thus demonstrate” should be “and thus demonstrates”

Rows 445-462 – here you change between present and past tense back and forth several times, which is confusing. Pick one – preferably past tense – and apply it consistently to this section.

Row 469 – as on row 394, the word “exemplarily” can’t be used like this - rephrase

Row 470 “In the right column map extracts” should be “In the right column, map extracts”

Row 471 “For 2014 also the ice edge at the arrival time of the glider at the edge is included in the map” should be “For 2014, the ice edge at the arrival time of the glider at the edge is also included in the map”

Rows 490, 510 and 526 “toke place” should be “took place”

Row 520 “upper 55m” should be “upper 55 m”

Row 537 “making public available the UAE toolbox” should be “making the UAE toolbox publicly available”

Row 542 “Harald Rohr,OPTIMARE” should be “Harald Rohr, OPTIMARE” (missing a space after the comma)

Row 545 “We like to thank” should be “We would like to thank”

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Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-141>, 2018.