

Interactive comment on “Interannual sea ice thickness variability in the Bay of Bothnia” by Iina Ronkainen et al.

Anonymous Referee #2

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General Comments: This paper studies the evolution of ice thickness in the Bay of Bothnia. The dataset presented is very rich and deserves to be presented and published in The Cryosphere. The main topic of this paper is very important and really relevant.

Nonetheless, I feel like this paper has been rushed. Major editing (English especially) is needed to make the content more comprehensive especially for the Results, Discussion and Conclusion sections.

On the content, even though the dataset is very rich, I feel like the authors did not take the time to set up a proper methodology to exploit the full potential of the dataset. For example, the different EM datasets were not extracted in the same area each year (with their known issues in terms of data collection) and that makes it very difficult to make any

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solid conclusions from the current methodology. I would have seen the EM data used to validate/correlate the information given in the ice charts and then used the charts to give some more solid conclusions and give a good discussion on the pros and cons of each dataset and how it affects the interpretation of the data from charts. This is just an example, I strongly advise that the methodology be revisited but the dataset presented definitely has the potential to give great results.

Another comment I would add is the literature review. Many studies have been published on sea ice thickness around the world (Arctic and Antarctic). It would be good for the authors to describe how their study compares to other studies made in the past. Also, some statements in the paper are not supported by any references, this has to be addressed.

I added comments in the attached pdf that should be addressed as well.

I recommend major reviews be done before another revision round.

Please also note the supplement to this comment:

<https://www.the-cryosphere-discuss.net/tc-2018-87/tc-2018-87-RC2-supplement.pdf>

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2018-87>, 2018.

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