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Interactive comment on "Subglacial topography, ice thickness, and bathymetry of Kongsfjorden, northwestern Svalbard" *by* Katrin Lindbäck et al.

Anonymous Referee #2

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The authors publish the data as a dataset in addition to another paper. Ice thickness grids is a fundamental parameter for many glaciological applications, and also useful for other purposes. My main objection to the paper in its current state is that I miss the point data of ice thickness that are very valuable for researchers and projects such as demonstrated in the ITMIX project (Farinotti et al. 2017). There is an available database for ice thickness data, GlaThiDa, with a recent call out for GlaThiDa 3.0 (WGMS on cryolist on 2018-02-21, instructions on the website: http://wgms.ch/glathida_cfd/) and I suggest the authors prepare their dataset accordingly, publish it along with the grids in this data paper and refer to GlaThiDa in their paper. http://www.gtn-g.ch/data_catalogue_glathida/ This would be a real enrichment of the dataset and make it much more useful for researchers.

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Data availability: It is written in the paper that 'the compiled data sets of ground-based and airborne radar surveys are freely available at:doi:10.21334/npolar.2017.702ca4a7'. This doi was not working and I could not assess it.

Figures

Figure 1. Add glacier basins for the five glaciers (from the recent Svalbard inventory). Makes it easier to see what mapped within each basin. Probably it is enough to have coordinates on two axes, e.g. below and right.

Figure 4. Difficult to see the location of the profiles in fig 1. I could not see it. Could here add the line that was digitized from the two profiles. Letter a and b are not on figure. Add to figure or add lower and upper in the figure text instead.

Figure 6. State surface elevation or bed elevation. Profiles(points) could been added to figure to show data source better.

Data: The datasets contained negative values of ice thickness. Ice thickness cannot be negative. There is no mentioning of this in the paper. The datasets need to be filtered, reviewed and resubmitted. As stated, the original datasets could be formatted to GlaThiDa and added to this paper, which would make it much more useful for researchers.

Reference:

Farinotti, D., Brinkerhoff, D. J., Clarke, G. K. C., Fürst, J. J., Frey, H., Gantayat, P., Gillet-Chaulet, F., Girard, C., Huss, M., Leclercq, P. W., Linsbauer, A., Machguth, H., Martin, C., Maussion, F., Morlighem, M., Mosbeux, C., Pandit, A., Portmann, A., Rabatel, A., Ramsankaran, R., Reerink, T. J., Sanchez, O., Stentoft, P. A., Singh Kumari, S., van Pelt, W. J. J., Anderson, B., Benham, T., Binder, D., Dowdeswell, J. A., Fischer, A., Helfricht, K., Kutuzov, S., Lavrentiev, I., McNabb, R., Gudmundsson, G. H., Li, H., and Andreassen, L. M.: How accurate are estimates of glacier ice thickness? Results from

ITMIX, the Ice Thickness Models Intercomparison eXperiment, The Cryosphere, 11, 949-970, https://doi.org/10.5194/tc-11-949-2017, 2017.

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