

Author response to the review of the manuscript “Sea ice melt pond bathymetry reconstructed from aerial photographs using photogrammetry...” by an Anonymous Referee

Black: Comments from the reviewer

Red: Responses from the authors

We greatly appreciate the positive feedback and are very grateful for the modifications raised by the reviewer, which we have fully considered to improve the quality of the manuscript.

Specific comments:

Line 26:

Suggest replace ‘simplified’ with ‘simplistically’.

Thank you for pointing out this incorrect use of words. We changed it accordingly.

Line 30:

Seems a shame to only mention the means and not to include the standard deviations reported in Morassutti and Ledrew (1996), Table 6. I think these would add to the already compelling case of the importance of your research, but I leave this to your judgement.

Many thanks for this great suggestion. We added the standard deviations and revised the entire paragraph according to the other reviewers comment.

Line 50:

The standard convention is ‘ICESat-II’, not ‘IceSAT-2’

Thanks for noticing. We changed it to “ICESat-2”, as mentioned by the other reviewer and used in the papers cited in this regard.

Line 66:

Make clear the type of survey you’re referring to.

Many thanks for spotting this gap. We added: “Only one experimental study on the photogrammetric derivation of pond depth from aerial images was carried out above sea ice before by [...]”

Figure 1:

Appreciate the lat/lons for the study area are provided in text but could you please also include them in the figure caption.

Many thanks for mentioning that. According to the other reviewers' comments about frequently too short figure captions, we have revised all of them, and in the course of this, we have also taken your suggestion into account.

Line 295:

Good interpretation of accuracy values.

We appreciate the feedback. Such high values of accuracy can be truly misleading!

Figure 2:

"All variables are explained in the text." This is not sufficient, Please add to the caption variable definitions.

Because of your comments on a couple of captions and the other reviewer's general comments on the caption, we revised all of them and added variable definitions to the captions to make the figures stand alone. Many thanks for making us aware on that.

Figure 12:

To clarify, is the penultimate class (royal blue) indeed $>35\text{cm}$ or $35 < x < 50$? I wonder if a colour bar may be more appropriate here.

Many thanks for noticing this flaw in the legend (the royal blue class was indeed $35 < x < 50$). We gladly followed the suggestion and changed the style to a colorbar.