The Cryosphere
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Discussions

Interactive comment on "Active Layer Thickness Estimation from X-Band SAR Backscatter Intensity" *by* Barbara Widhalm et al.

Barbara Widhalm et al.

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We thank the referee for the review of our manuscript and appreciate the comments. We will incorporate them and address them in detail during the final response phase. For now we would like to respond to some comments.

Response to comment on Pg 7: 12-19. *'I would have thought that vegetation water content and hence dielectric properties would also influence backscatter values, but this is not mentioned at all. Only vegetation structure is mentioned. An expanded discussion of the interaction of vegetation and backscatter would be good.'*
Thank you for your comment. This was also pointed out to us in other comments. We will expand the manuscript accordingly in the revised version.

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Response to comment on Pg 7:30 *'It was not clear to me if the radiometric normalization applied was to normalize radiometry between images, or to remove terrain related (incidence angle) radiometric effects within images. Clarify.'*
The radiometric normalization was applied to remove terrain related effects. We will revise the manuscript to clarify this.

Response to comment on Figure 1. *'The location map annotation needs to be enlarged. It was not readable.'*
We assume this comment refers to the annotations in the bottom right corner of the left location map. As it was not possible to enlarge it we put it in the figure description.

Response to comment on Figure 2. *"Flat slope' seems a strange and contradictory name.'*
We thank you for pointing this out. The names of this figure describing the topography of the CALM grid correspond to the metadata found for this CALM grid. Here three types of slope surfaces were subdivided: concave, flat and convex. We will rename the class from 'flat slope' to 'flat' to prevent confusions.

Interactive comment on The Cryosphere Discuss., doi:10.5194/tc-2016-177, 2016.