

The Cryosphere Discuss., author comment AC1  
<https://doi.org/10.5194/tc-2021-60-AC1>, 2021  
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## **Reply on RC1**

Alexandra Hamm and Andrew Frampton

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Author comment on "Impact of lateral groundwater flow on hydrothermal conditions of the active layer in a high-Arctic hillslope setting" by Alexandra Hamm and Andrew Frampton, The Cryosphere Discuss., <https://doi.org/10.5194/tc-2021-60-AC1>, 2021

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We would like to thank the reviewer for the time they have taken to offer insightful and constructive comments to our manuscript. We have addressed the comments in our responses to the reviewer below. This has led to several improvements and clarifications to our study. In particular, the main changes include the improvement of the geometric representation of the hillslope system, to now account for a more realistic valley formation, which better resembles site conditions in the Adventdalen region; the addition of information on frequency and distribution of slopes around the Arctic for upscaleability; the clarification of some figures and their captions, and removing some superfluous subfigures and text. We also made efforts to make the text more concise. With these changes we believe the manuscript has been significantly improved.

Please find our responses to the comments in the attached pdf file.

Please also note the supplement to this comment:

<https://tc.copernicus.org/preprints/tc-2021-60/tc-2021-60-AC1-supplement.pdf>