The Cryosphere Discuss.,
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The Cryosphere Discussions
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Interactive comment on "Simulating the roles of crevasse routing of surface water and basal friction on the surge evolution of Basin 3, Austfonna ice-cap" *by* Yongmei Gong et al.

Yongmei Gong et al.

yongmei.gong@helsinki.fi

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Dear Editor and Reviewers

We have revised the manuscript 'Simulating the roles of crevasse routing of surface water and basal friction on the surge evolution of Basin 3, Austfonna ice-cap' in response to the reviews. This includes more description of the models, clarifying the methodology of crevasses map generating from the satellite image and modeled crevasses distribution validation, a few modifications in the discussion section as well as the suggested modification for the figures (attached).

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Discussion paper

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A point by point response to both reviewers is attached as a pdf file. We respond to the specific referee points (in bold) below. Our replies are in normal black font, original manuscript quotes are in italic, and new text in the manuscript is in blue.

Thank you for your consideration. Yongmei Gong, Thomas Zwinger, Jan Åström, Bas Altena, Thomas Schellenberger, Rupert Gladstone, John C. Moore

Please also note the supplement to this comment:
https://www.the-cryosphere-discuss.net/tc-2017-180/tc-2017-180-AC1-supplement.pdf

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Interactive comment on The Cryosphere Discuss., https://doi.org/10.5194/tc-2017-180, 2017.

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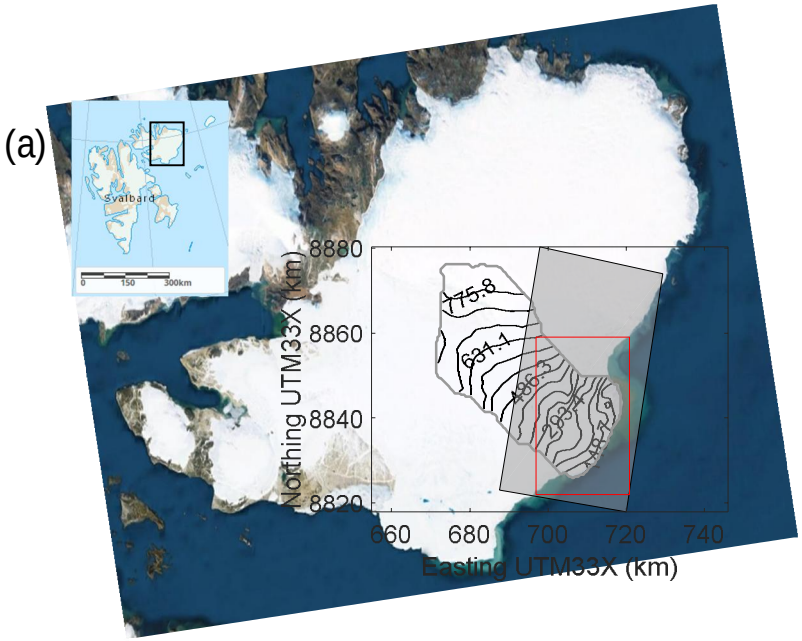

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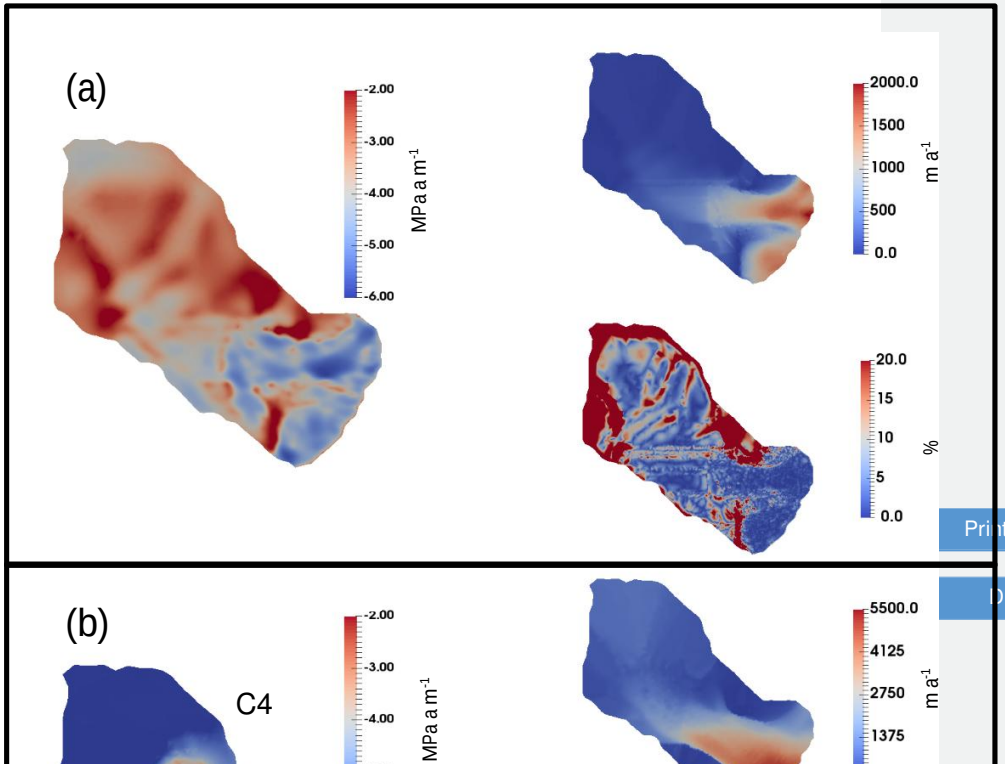

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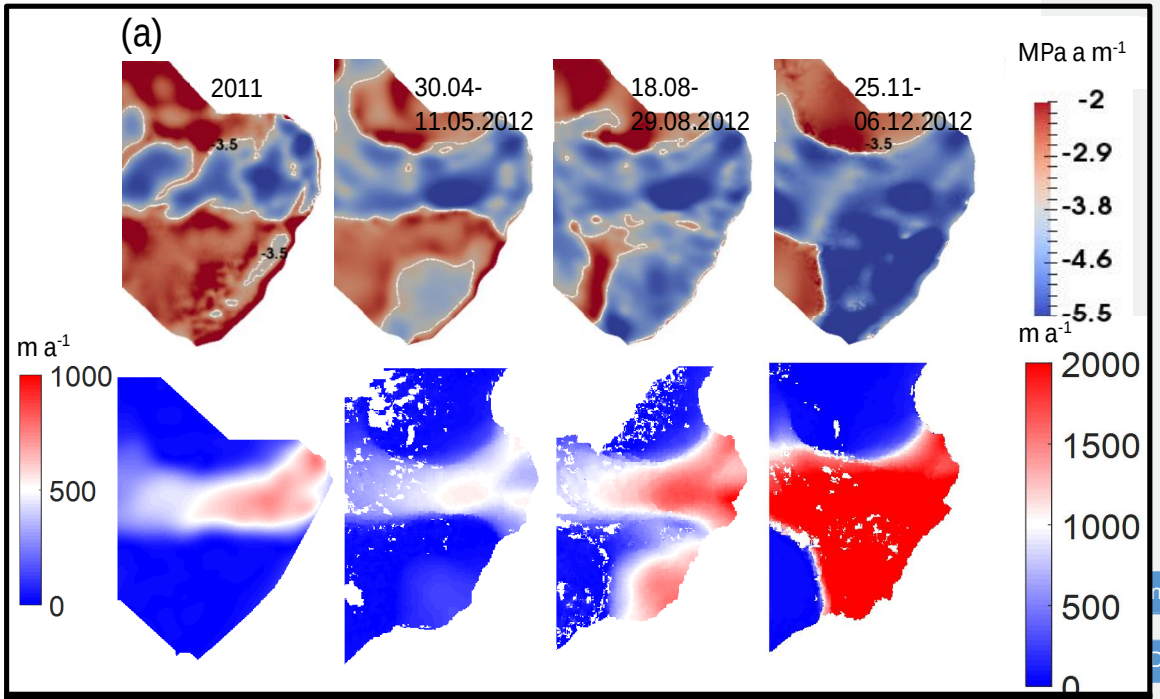

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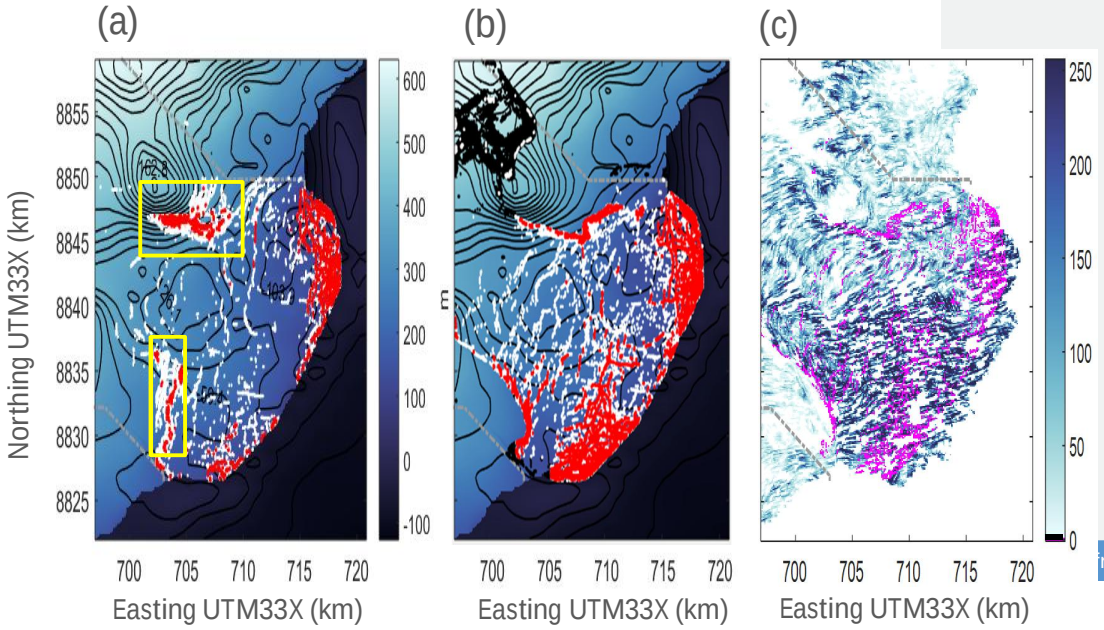

Figure 5. Crevasse distribution from HiDEM on (a) August 2012 and (b) August 2013 and (c) satellite observation. The color of the underlying image in (a) and (b) shows the surface elevation of the glacier. Bedrock topography contours are shown in black with a ~23.7 m interval. All the dots in both (a) and (b), regardless of the color, indicate the modeled crevasse

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