

Interactive comment on “Brief communication: Mapping river ice using drones and structure from motion” by Knut Alfredsen et al.

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Received and published: 6 November 2017

This communique highlights the application of drones in river ice work. Such applications are becoming more and more essential as advances in river ice research are requiring more detailed descriptions of the characteristics and geomorphological settings of ice, hence this note is timely. It introduces a method to other river ice researchers seeking an inexpensive and safe alternative for ice cover mapping.

Before this communique is accepted for publication, some amendments and revisions are required:

Limitations of the photography are extensively elucidated (particularly on Page 6), however little is said about the limitations of using UAVs themselves. Examples may in-

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clude: - additional qualifications and registration required of the UAV operator, - operations feasible only on wind-calm days, - only short flights are possible (also through regulations) and - UAVs cover smaller aerial extents compared to other methods. Perhaps these can be listed in the Introduction so that the reader can assess if these limitations would hinder their particular case studies.

The section of consolidated ice shown in Figure 1 is labelled ‘ice jam’. This may not be quite correct since ice jams usually extend across the river width to cause backwater staging. Perhaps labelling this section as ‘consolidated ice’ or ‘ice-jam remnant’ is more accurate.

Line 27 on Page 5 refers to “free water”. I’m not sure what is meant here. “Open water” doesn’t quite fit either since how can river ice have open water. Please restructure the sentence to clarify its meaning.

Some minor, editorial revisions include: Page 1, Line 23: replace “difficult and potentially dangerous” to “difficulties and dangers” Page 1, Line 30: “ice processes dynamics” should read “ice process dynamics” or “the dynamics of ice processes”. Page 2, Line 33: perhaps replace “built” with “constructed” Page 3, Line 30: “were”, not “was” Page 5, Line 17: “where”, not “were”

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2017-209>, 2017.

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