

## ***Interactive comment on “Snow depth estimation by time-lapse photography: Finnish and Italian case studies” by Marco Bongio et al.***

**Marco Bongio et al.**

marco.bongio90@gmail.com

Received and published: 8 April 2020

We would like to thank the Reviewer for the time and valuable comments to our work. Below we will report our replies to each of your comments following this format:

Reviewer’s 3 comment

Authors reply

Reviewer #3 says: “The manuscript Snow depth estimation by time-lapse photography: Finnish and Italian case studies” by Bongio et al. attempts at reporting a new algorithmic method to derive snow depth from time-lapse images. This topic has been covered in many studies for many years, some of them even referenced by the authors. In the current form of the manuscript, it is really hard to see what this study really brings to

C1

complement previous studies.”

Authors reply: In the revised version of the manuscript, we have improved its readability.

Reviewer #3 says: “As a simple example, it lacks a simple comparative tables of performance of this “new” method with older ones. But even besides the content, this manuscript reads like a poorly written report. Too many sentences have syntax problems. And even more importantly, this manuscript requires serious restructuring and refocusing to be qualifiable as a scientific manuscript.”

Authors reply: In the revised version of the manuscript, we have heavily restructured and refocused the manuscript, as follows:

- Shortened and focused the “Introduction” section,
- Reshaped the “Methodology” section,
- Reported first “Methodology” and then “Case studies”,
- Shortened the “Case study” description,
- Separate sections for “Results” and “Discussion”

Reviewer #3 says: “It will require a clear motivation of the work, a clear background section that allow the reader to understand specifically what this new study brings in comparison to previous work.”

Authors reply: Yes, we agree. We have specified this in the revised version of the “Introduction” section.

Reviewer #3 says: “Within the very first sentence of the abstract there are issues. See below: line 9: potentiality could be replaced by potential line 9: “boreal forested”, here it should read “the boreal forest” or in the “forested boreal regions” line 10: what is meant by snowboards? By default this refers to the gliding object on snow unless further specified. line 14: What is an “ad-hoc” algorithm. The combination of ad-hoc and quotes is really unclear. And what does this mean? line 19: “correction the well known ...” this is grammatically incorrect, the whole sentence has syntax issues.”

Authors reply: Fixed, not only in the Abstract, but throughout all the manuscript.

C2

Reviewer #3 says: "The introduction is equally problematic: Line 30: why is "Earth Energy balance" with capital letters? Line 36: this sentence is overly complicated for a very simple meaning. Line 46: you mention "a lot of studies" but cite only one : : : All the way to line 105 (introduction section) we have no idea what the manuscript is about. There is a lot of background on snow hydrology and observation techniques with no motivation as to why it is relevant to the manuscript. Moreover each method to observe snow depth is described as "possible" with its limitation, which reads as an unfair trial to all of them. Finally, the sentence "In these studies, the principal aim is to show how time-lapse photography could be used for investigating snow processes, but they were not properly focused in snow depth retrieval purposes." is vague and unfounded. What is meant by the term "properly"? Almost all of these studies have a primary focus at retrieving snow depth from time lapse imagery."

Authors reply: We agree and the "Introduction" section has been heavily modified, shortened and focused on the time-lapse photography.

Reviewer #3 says: "Overall, this manuscript would require major rewriting before a possible evaluation of its content."

Authors reply: We really hope that the revised manuscript with all modifications will answers the Reviewer's comments.

---

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2019-193>, 2019.