

**Comment by Niccolò Dematteis**

We thank Niccolò Dematteis for making us aware of this recent publication. In this reply, we highlight the comments from Dr Dematteis in orange and our responses in black font.

**R3C1:** Dear authors, I read with interest your work, as I am involved in similar research. I would like to inform you about a very recent publication of ours (<https://ieeexplore.ieee.org/document/9997554>). Our work focuses on the same topic that is treated in your manuscript, starting from the same concept but solving the issue differently. As evident, in the very last years, different research teams worked on this topic independently, thus proving the interest in this theme among the scientific glaciological community.

**R3A1:** We thank the reviewer for this positive appraisal and recognition of our work. Unfortunately, this interesting paper was not yet available when we submitted our manuscript, but we will include it a revised manuscript.

**R3C2:** I have a curiosity about your work: are the Landsat images orthorectified on the same DEM? If not, can a certain bias verify if the case of the adopted DEMs are acquired at large temporal distances (since the glacier elevation where the satellite images are projected has likely varied)?

**R3A2:** We used orthorectified Landsat imagery which is processed using different sources of elevation data including SRTM, NED, and other DEMs. We used the SRTM as well as other DEMs that are not among those used for the terrain correction. It is possible that long periods between image acquisition and DEM acquisition might introduce some bias. Visual analysis of imagery of glacial surfaces did not reveal any such bias.