Earth Syst. Sci. Data Discuss., author comment AC5
https://doi.org/10.5194/essd-2021-48-AC5, 2021
© Author(s) 2021. This work is distributed under
the Creative Commons Attribution 4.0 License.

General Reply

Aleksandra M. Tomczyk and Marek W. Ewertowski

Author comment on "Baseline data for monitoring geomorphological effects of glacier lake outburst flood: a very-high-resolution image and GIS datasets of the distal part of the Zackenberg River, northeast Greenland" by Aleksandra M. Tomczyk and Marek W. Ewertowski, Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2021-48-AC5, 2021

Dear Editor,

Dear Referees,

We would like to thank you for your constructive comments and remarks. We answered reviewers' comments and modified the manuscript according to the suggestions:

1) As proposed by Referee #1, we added information about the frequency of GLOFs at Zackenberg.

2) Following the suggestions of Referee #2, we provided a brief paragraph about GLOFs in Greenland, added information about summer discharges at Zackenberg, and added a figure (Fig. 9) with an example of change detection analysis based on debris flows located close to the research station.

3) The biggest concern of Referee #3 was the limited number of potential data users. We explained and demonstrated that our dataset is not only interesting for researchers studying the Zackenberg river but also for scientists interested in broader process-based research on flood effects. Regular GLOFs at Zackenberg make this area an ideal field-based "experiment" site to study processes such as sediment transport, entrainment, and erosion and also impact of floods on ecosystems and delivery of organic matter from permafrost - and our dataset can be used to establish of long-term monitoring. Zackenberg Research Station's proximity can facilitate this long-term monitoring by logistics support and access to the Arctic environment, which is otherwise relatively hard to access and survey. Moreover, Zackenberg Research Station hosts many researchers every year interested in utilizing the presented dataset as a background and for further in-depth analysis. Therefore, considering researchers visiting Zackenberg Station and scientists interested in broader process-based research, our dataset will attract a sufficient number of users to fulfil ESSD goals.

4) Referee #4 concerns were related to the lack of DGPS ground control points. We explained that our processed datasets were registered using coordinates from the onboard

GNSS system further constrained by control points collected from older surveys. Therefore, all surveys were registered to the same space of geographical coordinates to ensure high (dm-scale) external accuracy and very-high (cm-scale) internal precision. Furthermore, our datasets were processed using industry standards and guidelines to ensure the high quality and reproducibility of processed datasets. Moreover, as demonstrated in several studies (e.g., Feurer and Vinatier, 2018; Cook and Dietze, 2019; de Haas et al., 2021), co-alignment of time-series of surveys using structure-from-motion (SfM) processing can provide better relative accuracy than the classic approach of individual SfM processing of each survey using GCP. Therefore, we also provided unprocessed images that can be easily co-aligned and combined with future surveys. Another concern was related to the fact that our data were already uploaded in 2 Zenodo repositories – however, publishing data in an easy to access repository is required by ESSD before submission of the Data description paper.

Please, find the responses to individual comments posted under each of the revies and coded using the following key:

Bold – referee's comment

Italic – our response

Normal text – modifications of the manuscript

We believe that our explanations and modifications of the manuscript will convince the Editor and Referees that our data set is of high quality and will attract a sufficient number of end-users to be suitable for publication in ESSD.

Yours Sincerely,

Aleksandra Tomczyk and Marek Ewertowski