



Comment on **essd-2021-48**

Anonymous Referee #1

Referee 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-RC1>, 2021

The Arctic regions are undergoing rapid and significant changes and the monitoring of natural events occurring in response to ongoing and accelerated climate warming is of high importance. High-resolution and high-quality data particularly from low-frequency high-magnitude events are still rare and without doubt urgently needed. As stated by the authors, the ability to detect changes in the geomorphology of the riverbed and riparian areas remains a crucial issue in monitoring and modelling the geomorphic effects of flood events.

The authors present a high-quality and high-resolution dataset and contribute to filling a still existing gap (or need) to generate more high-resolution and high quality data on natural processes in sensitive high-Arctic environments.

The highly relevant data are carefully and very well presented and described. The dataset can be well accessed. The authors explain carefully and in detail various potential applications of the presented dataset, including the establishment of a long-term monitoring of high-Arctic river valley development in permafrost terrain, the quantification, monitoring and modelling of geomorphological impacts of glacier lake outburst floods, and geo-hazards assessments.

The authors have published results on the described flood event before and relate the description of the dataset to this previously published work.

Maybe the authors could add some more discussion on the expected frequency (recurrence intervall) of the high-magnitude low-frequency event presented in this data description paper, and on the quantitative importance of this high-magnitude low-frequency event as compared to low-magnitude high-frequency events in the investigated study site.