***Supplement S1*** *– Digital Orthophoto (DOP) on top, and Digital Elevation Model (DEM) on bottom, derived from drone-based photogrammetry surveys conducted at the Rhône collapse feature site over five dates in 2022-23. The data were acquired by the VAW Glaciology group from the ETH Zürich. The white squares depict the borders of the corresponding GPR dataset. Northing (N) and Easting (E) are relative to 1159540 m and 2672690 m in the CH1903+ coordinate system, respectively.*
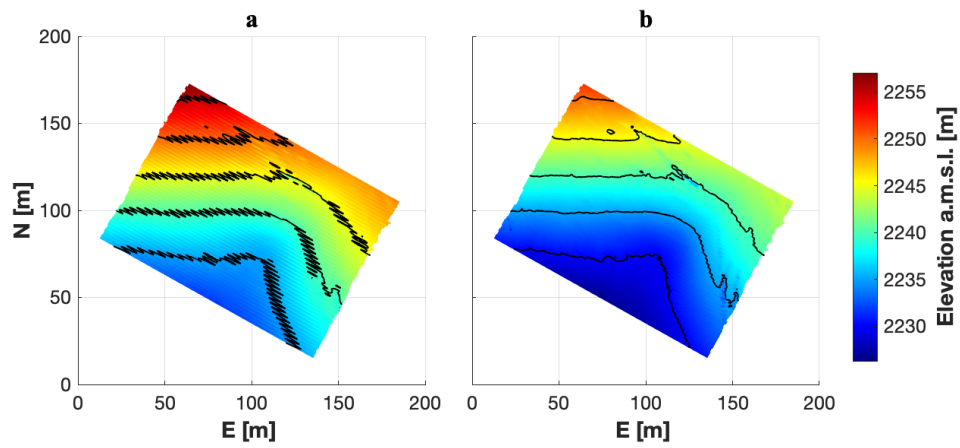
Supplement S2 *– GPR acquisition surface for the July 2022 survey. (a) raw GPR acquisition surface computed from the GPS coordinates of the drone. (b) surface from (a) after smoothing through local linear regression using 2% of the datapoints. Northing (N) and Easting (E) are relative to 1159540 m and 2672690 m in the CH1903+ coordinate system, respectively.*
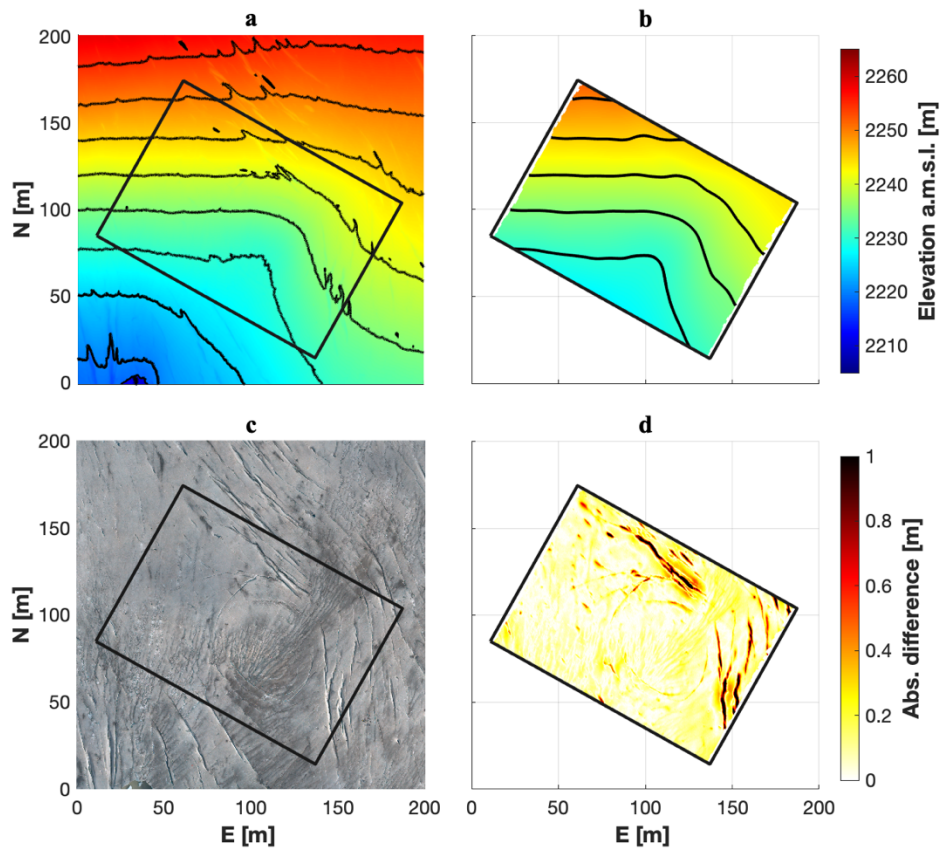
Supplement S3 *– Glacier surface for the July 2022 survey. (a) DEM from photogrammetry data. (b) surface from (a) after smoothing through local linear regression using 2% of the datapoints. (c) DOP from photogrammetry data. (d) Absolute value of elevation difference between surfaces from (a) and (b). Except over crevasses (see (c)), absolute difference is less than 0.2 m elsewhere. The black square depicts the border of the July 2022 dataset. Northing (N) and Easting (E) are relative to 1159540 m and 2672690 m in the CH1903+ coordinates system, respectively. Photogrammetry data acquired by the VAW Glaciology group from the ETH Zürich.*