

Supplement to:

Reconstructing Glacier Dynamics in Complex Terrain with ICESat-2 and Gaussian Process Interpolation

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Overview:

This supplement provides time series of interpolated ICESat-2 surface elevation changes for Svalbard (SVL) and the Larsen-B (LB) region, derived using either multi-annual time periods or individual ICESat-2 repeat cycles. Details of the data processing and interpolation methodology are described in the main manuscript.

Results for the multi-annual analyses are stored in folders labeled “yearly-fields...”. For each time period (e.g., 2019–2020), spatial fields of elevation change rate (dh/dt) are shown, consistent with the presentation in Figures 4 and 5 of the main manuscript.

Outputs based on single ICESat-2 repeat cycles are contained in folders labeled “1-cycle-fields...”. These time series begin with ICESat-2 Cycle 3 in March 2019. In addition to the dh/dt fields, the cumulative surface elevation change (dh) relative to the start of each time series is provided (file extension: *dh.png*).

For both approaches, animated GIF files summarize the temporal evolution of surface elevation changes and illustrate the progression of dynamic glacier signals over time.

Moreover, additional plots for different gap sizes of the artificial void experiments are included.