

# Supporting Information for “Statistical inference shows Helheim Glacier velocity response to runoff, terminus position, and topography”

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## Contents of this file

1. Figure S1

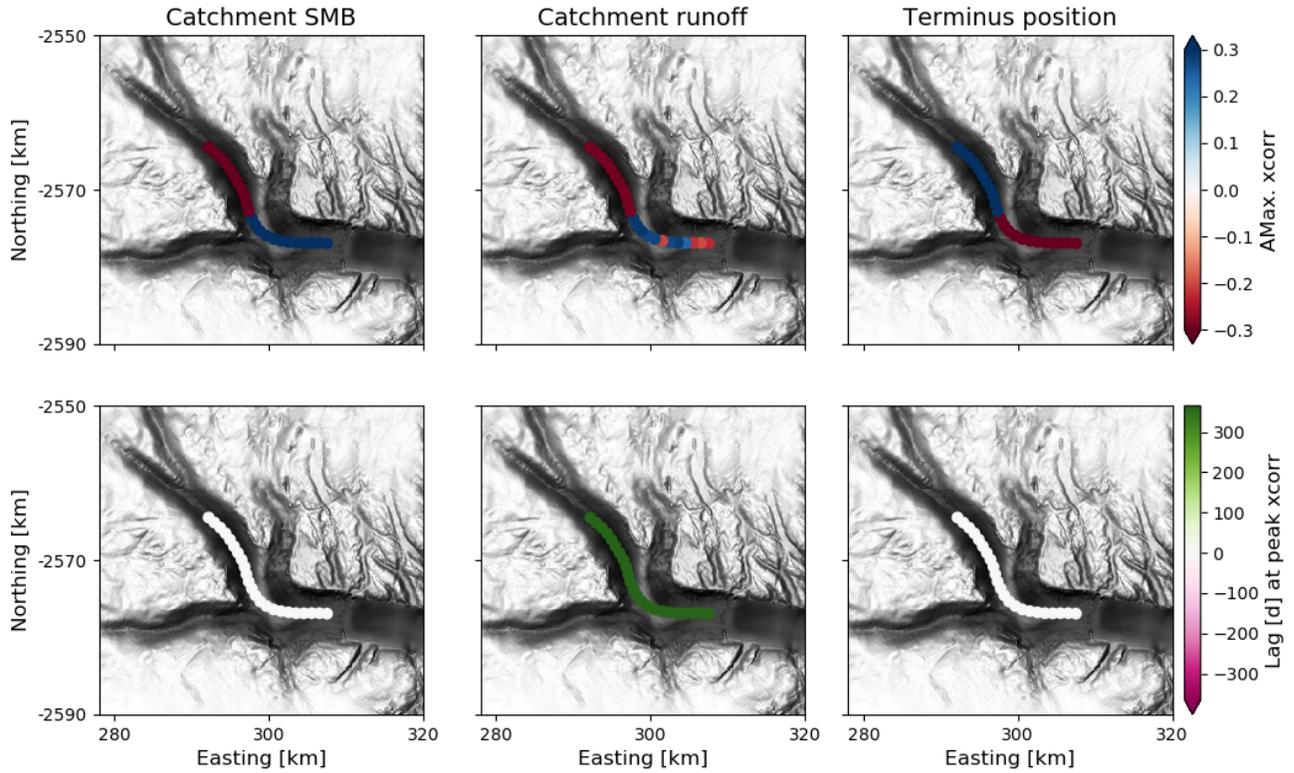
## Additional Supporting Information (Files uploaded separately)

1. Caption for Dataset S1

**Data Set S1.** Terminus position of Helheim Glacier (2002-2019) in terms of a width-averaged distance from an upstream flux gate, identified from satellite imagery. We primarily use Moderate Imaging Spectroradiometer (MODIS) imagery, but incorporate Landsat and Sentinel-2 imagery when available. Terminus positions are derived manually until 2010 (Schild & Hamilton, 2013) and using an semi-automated technique thereafter (e.g. Foga et al., 2014).

## References

- Foga, S., Stearns, L. A., & van der Veen, C. (2014). Application of satellite remote sensing techniques to quantify terminus and ice mélange behavior at Helheim Glacier, East Greenland. *Marine Technology Society Journal*, 48(5), 81–91. doi: 10.4031/MTSJ.48.5.3
- Schild, K. M., & Hamilton, G. S. (2013). *Terminus position time series: Helheim and Kangerslugssuaq glaciers, Greenland*. National Science Foundation Arctic Data Center. Retrieved from <https://arcticdata.io/catalog/view/doi%3A10.18739%2FA2W93G> doi: 10.18739/A2W93G



**Figure S1.** Cross-correlation of largest absolute value (top row) and corresponding lag (bottom row) between the long-term varying components of ice surface speed and each variable (columns). Colorbars for cross-correlation and lag used here are consistent with main text Figure 3 to allow intercomparison; however, the range of values represented here exceeds those shown on that figure.