

## Seasonal Variability of Ice Motion for Hubbard and Valerie Glaciers, Alaska

Courtney Bayer,<sup>1,2</sup> Wesley Van Wychen,<sup>1</sup> Anna Wendleder<sup>3</sup> and Brittany Main<sup>1,4</sup>

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## SUPPLEMENTARY APPENDIX

## GAMMA RS Offset Tracking

For the TSX/TDX and RCM data, a window size of  $200 \times 200$  pixels and a step size of  $50 \times 50$  pixels were used for offset tracking. R2 velocity data was obtained pre-processed, as described in Main et al. (2022). In order for the cross-correlation algorithm to work, the input image pairs need to have been acquired in the same image geometry, determined by the repeat pass of the satellite. For TSX/TDX image pairs the repeat pass is 11 days, RCM provides data with a repeat pass as low as four days while R2 has an orbital repeat of 24 days. Image coherence is an important aspect of whether velocities can be well resolved using this method, with the loss of coherence resulting in a lower accuracy (Van Wychen et al., 2012). Coherence can be affected by changing surface features, such as melt and snowfall on the glacier surface (Van Wychen et al., 2012).

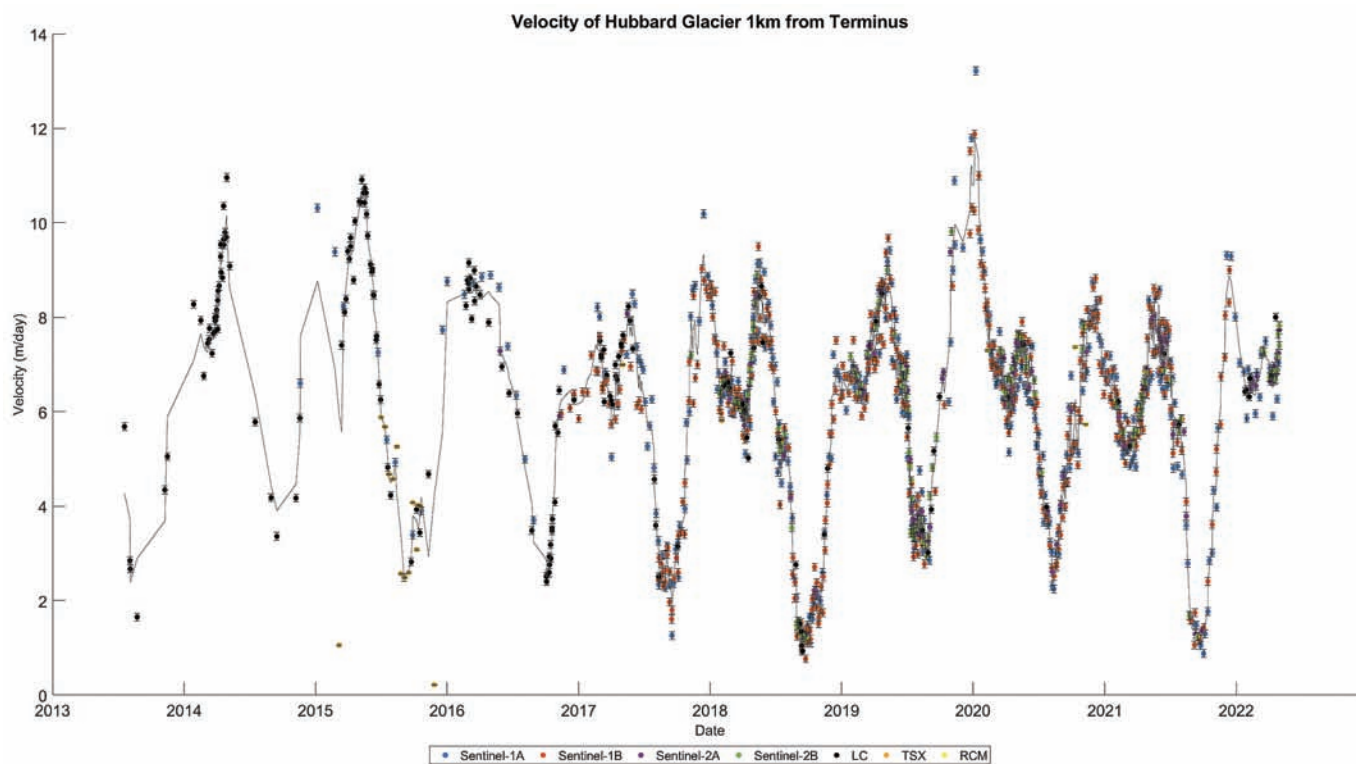


FIG. S1. One km from Hubbard Glacier's terminus showing the velocity errors of each dataset (excluding R2 as data was not available at this location).

<sup>1</sup> Department of Geography and Environmental Management, University of Waterloo, 200 University Avenue West, Waterloo, Ontario N2L 3D1, Canada; and Meteorological Research Division, Environment and Climate Change Canada, 2121 route Transcanadienne, Dorval, Québec H9P 1J3, Canada

<sup>2</sup> Corresponding author: [courtney.bayer@uwaterloo.ca](mailto:courtney.bayer@uwaterloo.ca)

<sup>3</sup> German Aerospace Centre (DLR), Oberpfaffenhofen, Germany

<sup>4</sup> Department of Geography, Environment and Geomatics, University of Ottawa