

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

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## SUPPLEMENTARY APPENDIX

### GAMMA RS Offset Tracking

For the TSX/TDX and RCM data, a window size of 200 x 200 pixels and a step size of 50 x 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).

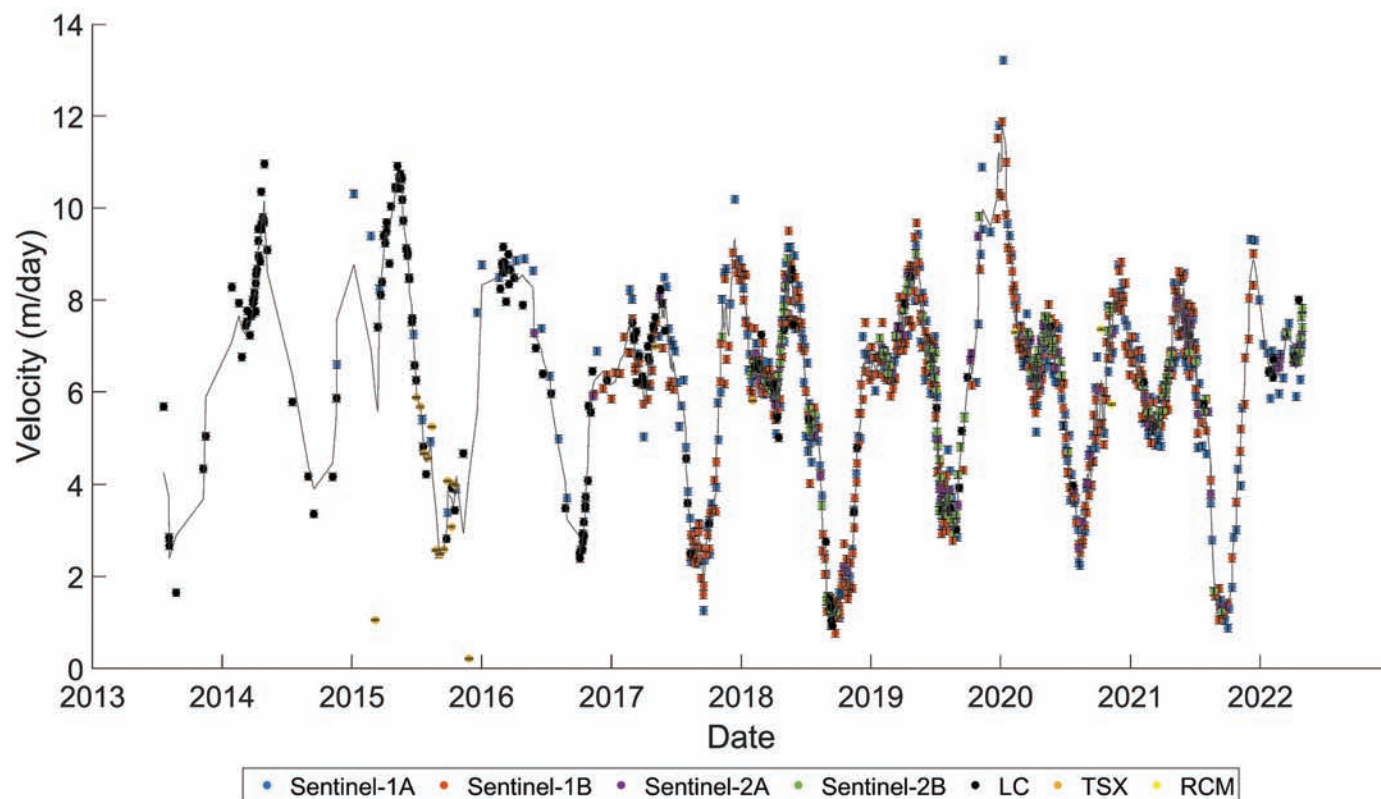


FIG. S1: 1 km from Hubbard Glacier's terminus showing the velocity errors of each dataset (excluding R2, as data was not available at this location).

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