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*Supplement of*

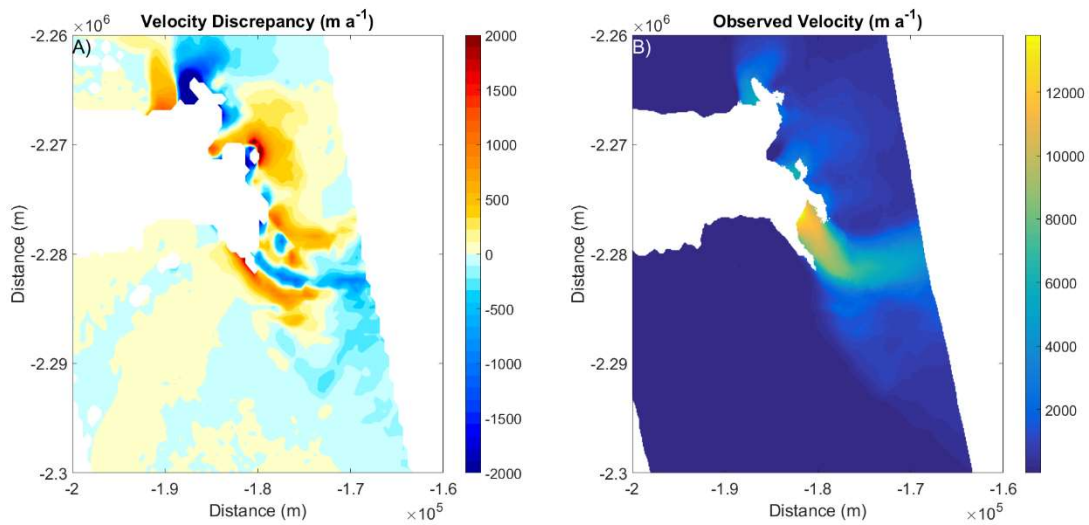
## **Simulated retreat of Jakobshavn Isbræ during the 21st century**

**Xiaoran Guo et al.**

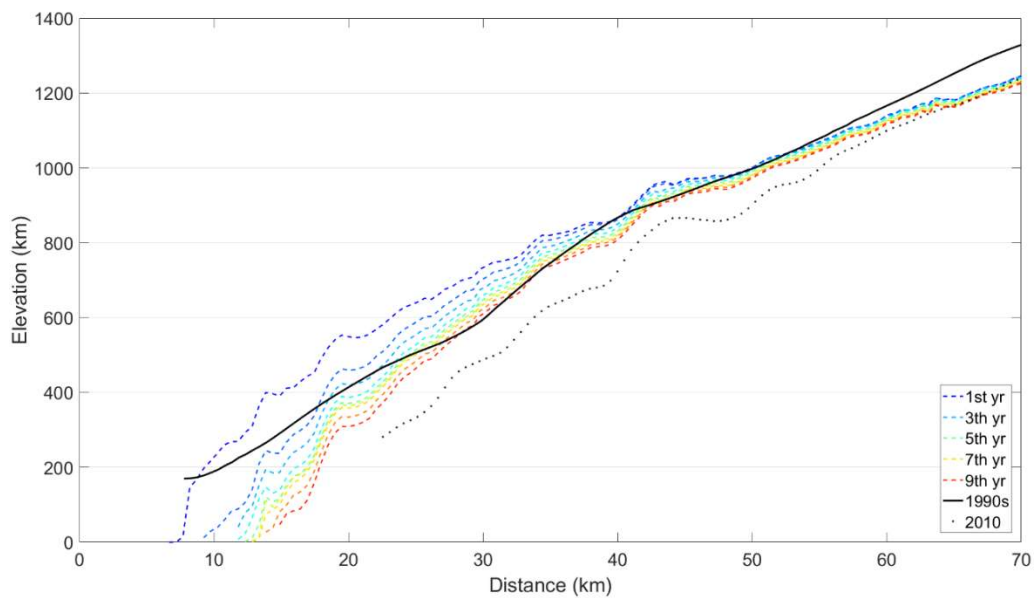
*Correspondence to:* John C. Moore ([john.moore.bnu@gmail.com](mailto:john.moore.bnu@gmail.com))

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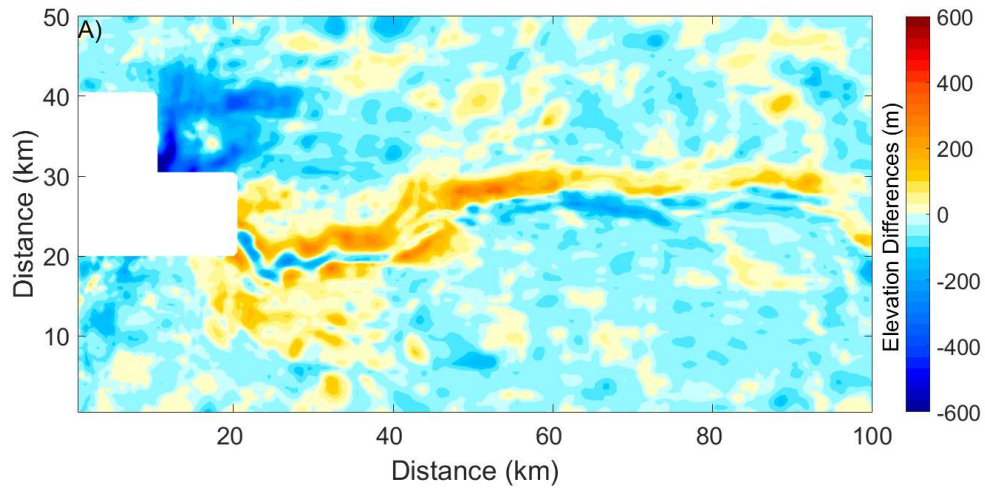
767 **Supplementary information**



768  
769 **Figure S1. A) Velocity discrepancy (velocity from inversion - observed) and B) the observed**  
770 **velocity field (Joughin et al., 2010).**



771  
772 **Figure S2. Profiles of surface elevation during the initialization procedure (section 2.3) step 3.**  
773 **Black solid line and black dashed line show the known profiles taken in the 1990s (Bamber et al.,**  
774 **2001) and 2010 (Gogineni et al., 2012) respectively. The profile with legend ‘1st yr’ is the final**  
775 **state of section 2.3 step 2. The profile ‘7<sup>th</sup> yr’ is the geometry rebuilt for 2004’s Jakobshavn, which**  
776 **is the initial state for later simulations.**



777

778 **Figure S3. Bed elevation from BedMachine v3 (Morlighem et al., 2017) minus those from**  
 779 **(Gogineni, 2012) used in this paper.**

780 **Reference**

781 Bamber, J. L., Layberry, R. L., and Gogineni, S. P.: A new ice thickness and bed data set for the  
 782 Greenland ice sheet: 1. Measurement, data reduction, and errors, *J. Geophys. Res.-Atmos.*, 106,  
 783 33773–33780, 2001