

Michael Wood

Curriculum Vitae

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Experience

2019-Present **Postdoctoral Fellow**, *Jet Propulsion Laboratory, California Institute of Technology*.
NASA Postdoctoral Program
Research Advisor: Ian Fenty

Research Interests

Glacier-Ocean Interactions; Ice Sheets; Regional Ocean Modeling; Remote Sensing

Education

- 2019 **Ph.D. in Earth System Science**, *University of California, Irvine*.
School of Physical Sciences
M.S. in Earth System Science received June 2016
Faculty Advisor: Eric Rignot
- 2013 **B.S. in Mathematical Science**, *University of California, Santa Barbara*.
College of Letters and Science
Minor in Earth Science
Study Abroad 2012 at the University of Auckland, New Zealand (1 year)

Publications (16)

†Manuscript in review, *Manuscript accepted

- 2021† E. Rignot, L. An, N. Chauche, M. Morlighem, S. Jeong, **M. Wood**, J. Mouginot, J. Willis, I. Klaucke, W. Weinrebe. Retreat of Humboldt Glacier, North Greenland, driven by undercutting from a warmer ocean. *Geophysical Research Letters*
- 2021† D. Cheng, W. Hayes, E. Larour, Y. Mohajerani, **M. Wood**, I. Velicogna, E. Rignot. Calving Front Machine (CALFIN): Glacial Termini Dataset and Automated Deep Learning Extraction Method for Greenland, 1972-2019. *The Cryosphere*
- 2021* Y. Choi, M. Morlighem, E. Rignot, **M. Wood**. Ice dynamics will remain a primary driver of Greenland ice sheet mass loss over the next century. *Nature Communications*
- 2021 **M. Wood**, E. Rignot, I. Fenty, L. An, A. Bjørk, M. van den Broeke, C. Cai, E. Kane, D. Menemenlis, R. Millan, M. Morlighem, J. Mouginot, B. Noël, B. Scheuchl, I. Velicogna, J. Willis, H. Zhang. Ocean Forcing Drives Glacier Retreat in Greenland. *Science Advances* doi:[10.1126/sciadv.aba7282](https://doi.org/10.1126/sciadv.aba7282)
- 2021 L. An, E. Rignot **M. Wood**, J. Willis, J. Mouginot, S. Khan. Ocean melting of the Zachariae Isstrøm and Nioghalvfjærdsfjorden glaciers, northeast Greenland. *Proceedings of the National Academy of Sciences* doi:[10.1073/pnas.2015483118](https://doi.org/10.1073/pnas.2015483118)
- 2020 M. Jakobsson, L. A. Mayer, ..., **M. Wood**, ..., K. B. Zinglensen. The International Bathymetric Chart of the Arctic Ocean Version 4.0. *Nature: Scientific Data* doi:[10.1038/s41597-020-0520-9](https://doi.org/10.1038/s41597-020-0520-9)

- 2019 L. An, E. Rignot, N. Chauché, D. Holland, D. Holland, M. Jakobsson, E. Kane, **M. Wood**, I. Klaucke, M. Morlighem, I. Velicogna, W. Weinrebe, J. Willis. Bathymetry of Southeast Greenland from Ocean Melting Greenland (OMG) Data. *Geophysical Research Letters*. doi:[10.1029/2019GL083953](https://doi.org/10.1029/2019GL083953)
- 2019 J. Mouginot, E. Rignot, A. Bjørk, M. van den Broeke, R. Millan, M. Morlighem, B. Noël, B. Scheuchl, **M. Wood**. Forty-six years of Greenland Ice Sheet mass balance from 1972 to 2018. *Proceedings of the National Academy of Sciences*. doi:[10.1073/pnas.1904242116](https://doi.org/10.1073/pnas.1904242116)
- 2019 M. Morlighem, **M. Wood**, H. Seroussi, Y. Choi, E. Rignot. Modeling the response of Northwest Greenland to enhanced ocean thermal forcing and subglacial discharge. *The Cryosphere*. doi:[10.5194/tc-13-723-2019](https://doi.org/10.5194/tc-13-723-2019)
- 2019 Y. Mohajerani, **M. Wood**, I. Velicogna, E. Rignot Detection of Glacier Calving Margins with Convolutional Neural Networks: A Case Study. *Remote Sensing*. doi:[10.3390/rs11010074](https://doi.org/10.3390/rs11010074)
- 2018 Bondzio, J.H., Morlighem, M., Seroussi, H., **Wood, M.H.** and Mouginot, J., Control of ocean temperature on Jakobshavn Isbræ's present and future mass loss. *Geophysical Research Letters*. doi:[10.1029/2018GL079827](https://doi.org/10.1029/2018GL079827)
- 2018 Y. Choi, M. Morlighem, **M. Wood**, J. Bondzio. Comparison of four calving laws to model Greenland outlet glaciers. *The Cryosphere*. doi:[10.5194/tc-12-3735-2018](https://doi.org/10.5194/tc-12-3735-2018)
- 2018 **M. Wood**, E. Rignot, I. Fenty, D. Menemenlis, R. Millan, M. Morlighem, J. Mouginot, H. Seroussi. Ocean-induced melt triggers glacier retreat in northwest Greenland. *Geophysical Research Letters*. doi:[10.1029/2018GL078024](https://doi.org/10.1029/2018GL078024)
- 2018 R. Millan, E. Rignot, A. Bjork,, J. Mouginot, **M. Wood**, J. Mouginot, M. Morlighem. Vulnerability of Southeast Greenland glaciers to warm Atlantic Water from Operation Ice Bridge and Ocean Melting Greenland data. *Geophys. Res. Lett.* doi:[10.1002/2017GL076561](https://doi.org/10.1002/2017GL076561)
- 2017 Y. Choi, M. Morlighem, E. Rignot, J. Mouginot, **M. Wood**. Modeling the response of Nioghalvfjerdingsfjorden and Zachariae glaciers, Greenland, to ocean forcing over the next century. *Geophys. Res. Lett.* doi:[10.1002/2017GL075174](https://doi.org/10.1002/2017GL075174)
- 2017 M. Morlighem, C. N. Williams, ... , **M. Wood**, and K. B. Zinglensen. Bedmachine v3: Complete bed topography and ocean bathymetry mapping of greenland from multi-beam echo sounding combined with mass conservation. *Geophys. Res. Lett.* doi:[10.1002/2017GL074954](https://doi.org/10.1002/2017GL074954)

Public Data and Code

- 2020 **Level 3 Digital Elevation Models of Greenland Glaciers.**
Generated from airborne radar data from NASA's Oceans Melting Greenland Campaign
Data available on the JPL [Physical Oceanography Distributed Active Archive Center](#)
Open-source code available at github.com/mhwood/glistin

Field Work

NASA Oceans Melting Greenland - AXCTD

Airborne eXpendable CTD Deployment

- 2020 Entire Greenland Coastline (135 flight hours)
2019 Northeast, North, and West Greenland (64 flight hours)

UCI Torssukataq Fjord Measurements

- 2018 Torssukataq fjord, West Greenland, June 30 - July 21, 2018. GAMMA Portable Radar Interferometer measurements of Sermeq Avannarleq and Sermeq Kujalleq.

NASA Oceans Melting Greenland - Bathymetry Mapping

CTD Measurements and Bathymetry Mapping

- 2017 Northwest Greenland, S/Y Ivalia (14 days at sea)
- 2016 Southeast Greenland, M/V Neptune (30 days at sea)
- 2015 Northwest Greenland, M/V Cape Race (26 days at sea)

Recent Presentations (since 2018)

Talks

- 2020 **M. Wood**, I. Fenty, J. Willis. Temporary Decline in Dynamic Thinning at Greenland Glaciers 2016-2020 revealed by GLISTIN-A and ICESat-2 *presented at OMG Science Team Meeting, Presented at OMG Science Team Meeting, Virtual Talk, 23 June*
 - 2020 **M. Wood**, I. Fenty, A. Khazendar, J. Mouginot, H. Seroussi, E. Rignot, J. Willis. Dynamic elevation change on Greenland glaciers 2016-2019 revealed by NASA's GLISTIN-A radar interferometer. *Presented at 2020 Program for Arctic Regional Climate Assessment, NASA Goddard Space Flight Center, Greenbelt, MD, 20 Feb.*
 - 2019 **M. Wood**, E. Rignot, A. Bjørk, I. Fenty, D. Menemenlis, M. Morlighem, J. Mouginot, B. Scheuchl, J. Willis. The modulating effect of ocean thermal forcing on the retreat of Greenland's tidewater glaciers *Presented at OMG Science Team Meeting, UC Irvine, Irvine, CA, 12 June*
 - 2018* **M. Wood**, E. Rignot, I. Fenty, D. Menemenlis, J. Willis, R. Millan, M. Morlighem, J. Mouginot. Assessing the role of the ocean in the widespread retreat of Greenland's tidewater glaciers over the past three decades. *Presented at American Geophysical Union Fall Meeting, Washington D.C. 10-14 Dec.*
- *Outstanding Student Paper Award
- 2018 **M. Wood**, E. Rignot, L. An, I. Fenty, D. Menemenlis, R. Millan, M. Morlighem, J. Mouginot. Increased ocean-induced melting triggers glacier retreat in Northwest Greenland. *Presented at ECCO Meeting, University of Texas, Austin, TX, 30 Oct.*
 - 2018 **M. Wood**, E. Rignot, I. Fenty, D. Menemenlis, R. Millan, M. Morlighem, J. Mouginot. Ocean-induced undercutting triggers glacier retreat in Northwest Greenland. *Presented at OMG Science Team Meeting, Scripps Institute of Oceanography, San Diego, CA, 13 Jun.*
 - 2018 **M. Wood**, E. Rignot, I. Fenty, D. Menemenlis, R. Millan, M. Morlighem, J. Mouginot. On the ocean-induced retreat of northwest Greenland glaciers: Insights from Oceans Melting Greenland (OMG) bathymetric mapping in 2017. *Presented at Program for Arctic Regional Climate Assessment, NASA Goddard Space Flight Center, Greenbelt, MD, 20 Jan.*

Posters

- 2019 **M. Wood**, E. Rignot, I. Fenty, J. Mouginot, M. Morlighem, J. Willis. The role of ocean warming in the widespread retreat of Greenland's marine-terminating glaciers. *Presented at American Geophysical Union Fall Meeting, San Francisco, C.A., 11-15 Dec.*
- 2019 **M. Wood**, E. Rignot, A. Bjørk, I. Fenty, D. Menemenlis, M. Morlighem, J. Mouginot, B. Scheuchl, J. Willis. The modulating effect of ocean thermal forcing on the retreat of Greenland's tidewater glaciers, *Presented at UCI Physical Sciences Alumni Day (Invited), UC Irvine, Irvine, CA, 6 Apr.*

Service

International Arctic Science Committee

- Jan 2020 - **Cryosphere Working Group Secretary.**
- Present Organized agenda for Arctic Summit Science Week 2020 (Akureyri, Iceland)

Manuscript Reviews

- 2020 Journal of Atmospheric and Oceanic Technology (1)

Geophysical Research Letters (1), JGR: Earth Surface (2), JRG: Oceans (1)
2019 Nature: Scientific Reports (1), Geosciences (1), JRG-Oceans (1)
2018 Nature: Scientific Data (1)