STEPHANIE OLINGER

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POSITIONS AND EDUCATION

Technical Director June 2024 - Present
Arctic Ice Project, 501(c)(3)

Thompson Postdoctoral Fellow December 2023 - June 2024
Stanford University
Department of Geophysics

Postdoc in Distributed Acoustic Sensing July 2023 - November 2023
University of Washington
Department of Earth and Space Sciences

Ph.D in Earth and Planetary Science 2018 - 2023
Harvard University
Department of Earth and Planetary Sciences

Affiliate 2021 - 2023
University of Washington
Department of Earth and Space Sciences

B.A. in Geophysics 2014 - 2018
Washington University in St. Louis
Department of Earth and Planetary Sciences

RESEARCH INTERESTS

Climate	Intervention and geoengineering, surface albedo modification, solar radiation management, calving flux management
Cryosphere and Climate	Ice-ocean interaction, floating ice fracture dynamics, floating ice flexure generated by ocean waves, climate intervention by modifying ice surface properties and dynamics, geoengineering
Seismology	Seismicity generated by ice fracture and iceberg calving, ice shelf flexural gravity wave propagation and resonance, ambient noise methods for interrogating near-surface structure, detection and location methods, distributed acoustic sensing in cryospheric settings
Machine Learning & Data Science	Clustering, signal detection, automated feature detection in images, optimizing physical models using machine learning

SKILLS

Mathematics	Dynamical systems analysis, linear systems, asymptotic methods, Fourier transform methods for PDEs, inverse theory, convolutional neural networks (CNN), regression analysis, timeseries analysis
Data	Distributed acoustic sensing (DAS), active & passive seismic, synthetic aperture radar, laser altimetry
Software & Tools	COMSOL, TensorFlow, SpecFEM2D, ArcGIS
Languages	Python, Julia, MATLAB

PUBLICATIONS

[1] S. D. Olinger, B. P. Lipovsky, and M. A. Denolle. "Ocean Coupling Limits Rupture Velocity of Fastest Observed Ice Shelf Rift Propagation Event". In: *AGU Advances* 5.1 (Feb. 2024), e2023AV001023. DOI: https://doi.org/10.1029/2023AV001023.

[2] S. D. Olinger et al. "Tracking the Cracking: A Holistic Analysis of Rapid Ice Shelf Fracture Using Seismology, Geodesy, and Satellite Imagery on the Pine Island Glacier Ice Shelf, West Antarctica". In: *Geophysical Research Letters* 49.10 (May 2022), pp. 6644–6652. DOI: 10.1029/2021GL097604.

[3] Z. Chen et al. "Ross Ice Shelf Icequakes Associated With Ocean Gravity Wave Activity". In: *Geophysical Research Letters* 46.15 (Aug. 2019), pp. 8893–8902. DOI: 10.1029/2019gl084123.

[4] S. D. Olinger et al. "Tidal and Thermal Stresses Drive Seismicity Along a Major Ross Ice Shelf Rift". In: *Geophysical Research Letters* 46.12 (June 2019), pp. 6644–6652. DOI: 10.1029/2019gl082842.

AWARDS AND FELLOWSHIPS

Thompson Fellowship (Stanford)	Accepted	2023
SeismoLab Director's Fellowship (Caltech)	Declined	2023
AGU Outstanding Student Presentation Award		2018

INVITED TALKS AND PRESENTATIONS

Geology & Geophysics Seminar	Oregon State University	2023
Ice+Climate Seminar	Dartmouth College	2022
SeismoTea Seminar	University of Utah	2022
Computational Physics and Mechanics Group Meeting	Vanderbilt University	2020
West Antarctic Ice Sheet Conference		2021
European Geophysical Union General Assembly		2021
American Geophysical Union Fall Meeting		2017-2023