

Lucas Sawade
Graduate Student in Geophysics
✉ lsawade@princeton.edu
🌐 lsawade.github.io 🔗 [lsawade](#)



Education

- Now – 2018** Ph.D. in Geophysics, Princeton University
Thesis: *Earthquake point sources in a heterogeneous Earth.*
Supervisor: *Jeroen Tromp*
- 2018 – 2016** M.Sc. in Geophysics, University of Bergen
Thesis: *Global Common Conversion Point Stacking and its Applications.*
Supervisor: *Stéphane Rondenay*
- 2016 – 2013** B.Sc. in Geophysics, University of Bergen

Skills

Software	Developed and contributed to software for simulating, processing, and visualizing seismic data using HPC resources; Paraview; Implemented Machine and Deep Learning for the detection of reflectors in seismic images (PyTorch).	Fortran	<div></div>
		Python	<div></div>
		Matlab	<div></div>
		HTML	<div></div>
		C++	<div></div>
Hardware	Setup and deployment of floating seismometers (MERMAIDs)	Kokkos	<div></div>
		Git	<div></div>
Languages	German (native), English (fluent), Norwegian (fluent)	LaTeX	<div></div>

Publications

- 2022** L. Sawade, S. Beller, W. Lei, and J. Tromp. Global Centroid Moment Tensor Solutions in a Heterogeneous Earth: The CMT3D Catalogue. *Geophys. J. Int.*, 231(3):1727–1738, 07 2022.
[PDF](#) [Supplement](#)
- 2016** S. Rondenay, K. Spieker, L. Sawade, F. Halpaap, and M. Farestveit. GLImER: A New Global Database of Teleseismic Receiver Functions for Imaging Earth Structure. *Seismological Research Letters*, 88(1):39–48, 11 2016.
[PDF](#) [Supplement](#)
- 2016** Y. Luo, M. D. Long, P. Karabinos, Y. D. Kuiper, S. Rondenay, J. C. Aragon, L. Sawade, and P. Makus. High-resolution ps receiver function imaging of the crust and mantle lithosphere beneath southern new england and tectonic implications. *Journal of Geophysical Research: Solid Earth*, 126(7):e2021JB022170, 2021.
[PDF](#)

Teaching Assistantships

- Princeton:** Freshman Research Seminar – Frederik J. Simons & Adam Maloof.
Introduction to the scientific method with data collection, basic data analysis, and scientific writing using Matlab, and Latex.
- Computational Geophysics – Jeroen Tromp.
Implementation of various numerical methods to solve PDEs.
- Global Geophysics – Frederik J. Simons.
Introduction to physics relevant for the Earth: Gravity, elasticity, etc.

Natural Disasters – Allan M. Rubin.
Introduction to Geosciences for non-geoscience majors.

Bergen: Introduction to Geophysics – Henk Keers & Stéphane Rondenay.
An introduction to most physics relevant for Geosciences: Gravity, elasticity, magnetism, electrical methods, and more

Physics of the Solid Earth – Henk Keers & Stéphane Rondenay.
Matlab skills, a deeper understanding of earthquake seismology, wave propagation, gravity, magnetism and plate tectonics.

Seismic Reflection Data: Acquisition and Processing – Rolf Mjelde & Stéphane Rondenay.
Introduction to acquisition design and signal processing of reflection seismic data using Matlab

Computational Seismology – Henk Keers & Stéphane Rondenay.
Implementation of various numerical methods to solve ray theoretical and wave propagation problems.

Calculus 101 – Gunnar Fløystad.
Introduction to single and multivariable calculus as a basis for other subjects, such as chemistry, biology, etc.

Awards

2020 Department of Geosciences Graduate Student Teaching Award, Princeton University

2019 SAGE/GAGE – Meeting Scholarly Travel Grant

Funded Proposals

2024 – 2022 National Science Foundation Award #2218859
Collaborative Research: Incorporating SPECFEM3D numerical seismograms in the Global CMT Project.

2023 – 2021 INCITE 2021 – Award for compute time at Oak Ridge National Laboratory’s supercomputer SUMMIT. Co-author.

Other Positions

Now – 2019 Princeton Institute for Computational Science and Engineering (PICSciE)
High-Performance Computing support staff (Twice-weekly, 1 hour help sessions)

2013 – 2012 Youth Worker for Stavanger Kommune, Norway.
Event organization focused on music.