## Lucas Sawade

Graduate Student in Geophysics

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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

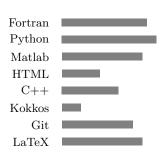
### Skills

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).

Hardware Setup and deployment of floating seismometers (MERMAIDs)

Languages German (native), English (fluent), Norwegian (fluent)



### **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, magnetics 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.