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Will Eaton

EDUCATION

Princeton University, USA   *(2021 - Present)*
Graduate Student in Theoretical and Computational Seismology
Advisor: Professor Jeroen Tromp
Current GPA: 4.0

University of Oxford, UK   *(2016 - 2021)*
Integrated BA and MEarth Sci in Earth Sciences - First Class Honours
Advisor: Professor Tarje Nissen-Meyer

RESEARCH EXPERIENCE AND PROJECTS

Graduate studies in Theoretical and Computational Seismology   *(2021 - Present)*
Elasto-gravitational numerical modelling on realistic, 3D Earth models

- Development of quasi-static, spectral-infinite-element modelling software for applications in glacio-isostatic adjustment and sea-level change.
- Benchmarking of global-scale, elastic-wave-propagation simulations using normal-mode-summation codes.
- Investigation and simulation of transient, seismically-induced gravity signals for earthquake early-warning systems and tsunami monitoring, and synthetic spectra of Earth's free oscillations for arbitrarily-complex, 3D Earth models.
- Supervised by Professor Jeroen Tromp (Princeton University) in collaboration with Professor Hom Nath Gharti (Queen's University)

Master's Thesis   *(2020 - 2021)*
Seismic scattering on Mars, Earth, its moon and supercomputers

- Investigating physical parameters facilitating a transition from ballistic to diffuse scattering behaviour of elastic waves.
- Numerical wave propagation through 3D heterogeneous media using AxiSEM3D.
- Development and application of novel analytical techniques such as (moving-window) multi-scale entropy to synthetic seismograms.
- Analysis of Lunar Apollo and Martian InSight seismic data using these novel techniques to compare scattering behaviour.
- Supervised by Professor Tarje Nissen-Meyer (University of Exeter).

Batchelor's Extended Essay   *(2020)*
Seismic heterogeneity and anisotropy in Earth's inner core and the implications for inner core dynamics

- Independent literature research project to produce 4000-word, review-paper-style extended essay.
- Skills gained in critical analysis of publications and synthesis/processing of publically-available data.

Undergraduate geological mapping project   *(2019 - 2020)*
Geology and tectonic history of Saint-Chinian, Languedoc, France

- Independent 6-week fieldwork project studying bedrock and collecting samples over 21 km^2, followed by sample analysis culminating in 5000-word report.

REVIEWED ARTICLES

2024	EATON, W. P., NISSEN-MEYER, T., HAINDL, C. Seismic scattering regimes from multiscale entropy and frequency correlations., 2024. *Geophysical Journal International*.
2023	Gharti, H. N., EATON, W. P., TROMP, J. Spectral-infinite-element simulations of seismic wave propagation in self-gravitating, rotating 3D Earth models., 2023. *Geophysical Journal International*.

CONFERENCE PROCEEDINGS

2023	EATON, W. P., GHARTI, H. N., TROMP, J., Spectral-infinite-element modelling of GIA and sea-level change. In *POLENET 2023 GIA Training School* (Gävle, Sweden, July 2023)
2022	EATON, W. P., GHARTI, H. N., TROMP, J., Seismic wave propagation in self-gravitating Earth models with 3D heterogeneity. In *AGU Fall Meeting 2022* (Chicago, IL, December 2022)
	EATON, W. P., HAINDL, C., NISSEN-MEYER, T., The transition from ballistic to diffuse wavefields on Earth, its Moon and Mars. In *AGU Fall Meeting 2022* (Chicago, IL, December 2022)
	GHARTI, H. N., EATON, W. P., TROMP, J., Spectral-infinite-element simulations of seismic wave propagation in self-gravitating, 3D Earth models. In *SSA Seismic Tomography: What comes next?* (Toronto, Canada, October 2022)

DEPARTMENTAL SEMINARS

2022	*'Elasto-gravitational simulations on a realistic 3D Earth'*. UTIG Discussion Hour Seminar, University of Texas at Austin. Virtual, 28th November 2022. Click here to view.

AWARDS

2023	**Myhrvold-Havranek Graduate Fellowship** - *Dept. of Geosciences, Princeton University*
2021	**Shell Prize** - *Dept. of Earth Sciences, Oxford University* Best overall performance in Earth Sciences Final Honours School. **Schlumberger Prize** - *Dept. of Earth Sciences, Oxford University* Best 4th Year performance in Geophysics.
2020	**Gibbs Prize** - *Dept. of Earth Sciences, University of Oxford* Best undergraduate independent research (geological mapping) project. **Burdett-Coutts Prize** - *Dept. of Earth Sciences, University of Oxford* Best overall 3rd Year performance in Earth Sciences Final Honours School. **University College Scholarship** - *University College, University of Oxford* Scholar status awarded in recognition of academic excellence.
2019	**Keith Cox Prize** - *Dept. of Earth Sciences, University of Oxford* Best 2nd year fieldwork during Assynt fieldtrip, Scotland. **University College Scholarship** - *University College, University of Oxford* Scholar status awarded in recognition of academic excellence.
2018	**International Seismological Centre Prize** - *Dept. of Earth Sciences, University of Oxford* Best 1st Year student in Mathematics and Geophysics.
2017	**University College Exhibition** - *University College, University of Oxford* Exhibitioner status awarded in recognition of academic excellence.

SKILLS

Programming:	FORTRAN, Git, LaTeX, MATLAB, Python, UNIX
Software & Tools:	ArcGIS PRO, Adobe Illustrator, Paraview, AxiSEM-3D, SPECFEM

PROFESSIONAL ASSOCIATIONS AND MEMBERSHIPS

American Geophysical Union   *January 2021 - Present*
Seismological Society of America   *February 2021 - Present*