Stephen G. Mosher

Contact Information

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Research Interests

Ocean-bottom seismometers, seismology, tectonics, signal processing, acoustics, early earth formation

Skills

Python, ObsPy, MATLAB, LaTeX, Linux, Bash, Git, GMT, ArcGIS, basic French, basic Mandarin, basic HTML, basic CSS

Education

(1) Doctorate in Philosophy – Earth Sciences — Jan. 2017 –
University of Ottawa, Ottawa, Canada (P. Audet)
- Thesis Title: Improvements to the Characterization of Seismicity and Deformation Within Oceanic Plates Using Ocean-Bottom Instruments.

(2) Master of Science – Earth Sciences — Oct. 2016
University of Ottawa, Ottawa, Canada (P. Audet)
- Thesis Title: P-Wave Study of the San Andreas Fault Near Parkfield, CA, From Ambient Noise Interferometry of Borehole Seismic Data

(3) Bachelor of Science – Physics — Apr. 2014
University of Ottawa, Ottawa, Canada
- Hons. Thesis: Investigating Mantle Anisotropy Beneath The Explorer Plate Via Shear - Wave Splitting

Employment

(1) Teaching Assistantships
University of Ottawa, Ottawa, Canada
- PHY1300 The Big Bang and Beyond (Andrzej Czajkowski) — Jan. – Apr. 2019
- GEO3191 Applied Geophysics (Glenn Milne) — Sep. – Dec. 2018
- PHY2323 Electricity and Magnetism (Michel Godin) — Jan. – Apr. 2018
- GEO3352 Geological Data Analysis (Pascal Audet) — Jan. – Apr. 2017
- PHY2390 Astronomy (Nikolay Shtinkov) — Sep. – Dec. 2016
- GEO1301 The Earth and How it Works (Olivier Nadeau) — Jan. – Apr. 2016

(2) Field Work
University of Ottawa, Ottawa, Canada — July 2018
- Network: Yukon-Northwest Seismic Network (YNSN)
- Principal Investigator(s): Pascal Audet
- Co-led field season
- Performed software upgrades at 5 stations

LDEO Columbia University, New York, USA — April 2018
- Network: Pacific ORCA
- Principal Investigator(s): Jim Gaherty, Göran Ekström, Zachary Eilon
- Deployed ocean-bottom seismometers in the open ocean
- Performed quality control of ship's multibeam data
- Deployed temperature probes to obtain accurate sound speed profiles

University of Ottawa, Ottawa, Canada — July 2015
- Network: YNSN
- Principal Investigator(s): Pascal Audet
- Installed seismometers in VSAT configurations
- Assessed quality of telemetered data using a spectrum analyzer
- Installations performed in remote areas

(3) Foreman (Spring/Summer Seasonal) — 2012 – 2014
Nata Reforestation and Management, Prince George, Canada
- Personally hired, trained, and managed crew sizes of up to 12 personnel
- Oversaw the production of over 1 million trees planted by hand
- Worked out of isolated camps for extended periods of time

Publications

(1) J. Gosselin, P. Audet, C. Estève, M. McLellan, **S.G. Mosher**, and A.J. Schaeffer, *Seismic evidence for megathrust fault-valve behavior during episodic tremor and slip.* Submitted to Science Advances (July, 2019).

(2) J. Russell, Z. Eilon, and **S.G. Mosher**, *OBSRange: A New Tool For The Precise Remote Location of Ocean-Bottom Seismometers.* Seismological Research Letters, DOI: 10.1785/0220180336 (2019).

(3) **S.G. Mosher**, C.-V. Christian, and Robert Smith? In press. (2018), *Modelling the effects of stigma on leprosy.* Springer Proceedings in Mathematics & Statistics. Mathematical Analysis and Applications in Modeling

(4) **S.G. Mosher** and P. Audet, *Recovery of P-waves from ambient noise interferometry of borehole seismic data around the San Andreas fault in central California.*, Bulletin of the Seismological Society of America, DOI: 10.1785/0120160375 (2017).

(5) **S.G. Mosher**, P. Audet and I. L'Heureux, *Seismic Evidence for Rotating Mantle Flow Around Subducting Slab Edge Associated with Oceanic Microplate Capture.*, Geophysical Research Letters, Vol. 41:13, 4548–4553 (2014).

Awards

(1) Featured in the University of Ottawa's Annual Reasearch Report 2019 – 2020
- Current report not yet published

(2) Earl D. & Reba C. Griffin Memorial Scholarship 2019

(3) NSERC CGS-D (2 years) 2019 – 2021

(4) University of Ottawa Excellence Scholarship 2019 – 2021

(5) CSEG Foundation Award 2019

(6) KEGS Collett Scholarship in Geophysics 2018 – 2019
- Inaugural recipient

(7) Ontario Graduate Scholarship 2017 – 2018

(8) University of Ottawa Excellence Scholarship 2017 – 2018

(9) University of Ottawa Admission Scholarship 2017 – 2021

(10) The Commission on Graduate Studies 2016
- Awarded for best M.Sc. thesis in the Sciences
- M.Sc. thesis nominated by the department

Conference Presentations

(1) **S.G. Mosher** and P. Audet, *Cross-Correlation Beamforming for Simultaneous Event Detection and Location in Conjunction With Logistic Regression for Event Discrimination.*, SSA Anuual Meeting (2019) - oral. Seattle, WA

(2) **S.G. Mosher** and P. Audet, *Characterizing Seismicity Offshore Cascadia by Applying Advanced Statistical Learning to Ocean-Bottom Seismic Data.*, KEGS Mini-Symposium (2018) - **invited**, oral. Toronto, ON.

(3) **S.G. Mosher** and P. Audet, *Characterizing Seismicity Offshore Cascadia by Applying Advanced Statistical Learning to Ocean-Bottom Seismic Data.* KEGS Meeting (2018) - **invited**, oral. Ottawa, ON.

(4) **S.G. Mosher** and P. Audet, *Detecting offshore seismicity in Cascadia using logistic regression applied to sub-arrays of ocean-bottom seismographs.*, AGU Annual Fall Meeting (2018) - poster. Washington, DC.

(5) **S.G. Mosher** and P. Audet, *Classifying seismic noise and sources from OBS data using unsupervised machine learning*, AGU Annual Fall Meeting (2017) - poster. New Orleans, LA.

(6) **S.G. Mosher** and P. Audet, *Unsupervised Machine Learning Clustering Applied to OBS Data*, Ocean-Bottom Seismograph Instrument Pool Symposium (2017) - poster. Portland, ME.

(7) **S.G. Mosher** and P. Audet, *Seismic interferometry based tomographic imaging of the San Andreas Fault near Parkfield, CA*, Geological Association of Canada – Mineralogical Association of Canada Meeting (2016) - oral. Whitehorse, YT.

(8) **S.G. Mosher** and P. Audet, *Body-Wave Scattering from Seismic Interferometry: Preliminary Results from the San Andreas Fault near Parkfield, California*, AGU Annual Fall Meeting (2015) - poster. San Francisco, CA.

(9) **S.G. Mosher** and P. Audet, *Body-Wave Scattering from Seismic Interferometry: Preliminary Results from the San Andreas Fault near Parkfield, California*, **S.G. Mosher** and P. Audet, AGU-CGU Joint Meeting (2015) - poster. Montreal, QC.

(10) **S.G. Mosher** and P. Audet and I. L'Heureux, *Mantle Flow Around Northernmost Cascadia from Seismic Anisotropy*, CGU Joint Annual Meeting (2014) - poster. Banff, AB.

References

- References available upon request