

# Clément Estève

*PhD candidate*

Department of Earth and Environmental Sciences  
University of Ottawa  
Ottawa, ON, Canada

*E-mail:* ceste044@uottawa.ca  
*Phone:* 613-371-9006

## Research interest

Integrating seismology to better constrain:

- Upper mantle structure beneath old continental lithosphere such as the Slave craton, Canada using body-wave tomography ;
- Dynamics and evolution of the Beaufort Sea continental margin ;
- The transition zone between the Phanerozoic lithosphere beneath the Cordillera and the juxtaposed Archean lithosphere underlying the Canadian shield ;
- Seismic Hazard Assessment, seismotectonics.

## Education

September 2016  
to – in progress

PhD Earth Sciences (Seismology), University of Ottawa, Canada  
*Thesis* : Evolution and dynamics of the lithosphere in western Canada  
*Supervisor:* Pascal Audet

September 2014  
to June 2016

M.Sc. Earth Dynamics and Natural Hazards, University of Montpellier, France  
*Thesis* : Impact of scaling laws on the quantification of maximum magnitude : Key parameter in seismic hazard studies  
*Supervisors:* Christophe Martin and Kristel Le Dortz

September 2011  
to June 2014

B.Sc. Geology, University of Montpellier, France

## Experience

### Field Work

July, 2019

BISN field technician: Deployment and maintenance run on seismic stations on Banks Island, Northwest Territories, Canada

2016 to 2018

YNSN field technician: Maintenance run on seismic stations in Yukon and Northwest Territories, Canada

September 2015 Active deformation in the region of l'Aquila, Italy (M<sub>w</sub> 6.1 April 6<sup>th</sup> 2009 earthquake)

February 2015 Dynamics and Tectonic of Betics Cordillera, Spain

## Teaching Assistant

2017 to 2019 Structural Geology and Tectonics, University of Ottawa: Instructed the laboratory component of this 2nd level course for undergraduate students  
*Professor: Pascal Audet*

2016, 2018 Introduction to Earth Materials, University of Ottawa: Instructed the laboratory/excursion component of this first level course for undergraduate students  
*Professor: Simone Dumas*

Fall 2019 Géophysique appliquée, University of Ottawa: Instructed the laboratory/excursion component of this third level course for undergraduate students  
*Professor: Maurice Lamontagne*

## Internships

January 2016 to July 2016 GEOTER S.A.S FUGRO – *Geologist intern*: Development of seismotectonic models (areas, fault systems) considering uncertainties in the quantification of seismic hazard  
*Supervisor: Christophe Martin*

Apr 2015 to June 2015 GEOTER S.A.S FUGRO – *Geologist intern*: Geological and geotechnical monitoring of well and gallery drillings on the working site of underground Meuse/Haute-Marne Laboratory, France  
*Supervisor: Philippe Combes*

## Scholarships and Grants

2019 CGU Solid Earth Section Best Student Presentation Award at IUGG 2019.

2019 GSC Geophysical Pioneers Scholarship.

2018 Brian Rust Memorial Graduate Scholarship.

2018 Travel award – University of Ottawa, Canada.

2016 to 2019 International Admission Scholarship – University of Ottawa, Canada.

## Publications

Estève C., Audet P., Schaeffer A.J., Schutt D., Aster R.C., Cubley J. Seismic evidence for craton chiseling and displacement of lithospheric mantle by the Tintina Fault in the Northern Canadian Cordillera, *Geology*, (in preparation).

Estève C., Audet P., Schaeffer A.J., Schutt D., Aster R.C., Cubley J. The upper mantle structure of northwestern Canada from teleseismic body wave tomography, *Journal of Geophysical Research: Solid Earth*, (submitted).

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

Estève C., Schaeffer A.J., Audet P., 2019, Upper mantle structure underlying the diamondiferous Slave craton from teleseismic body-wave tomography, *Tectonophysics*, 757, pp 187-202, 10.1016/j.tecto.2019.01.012

## Oral presentation

Estève C., Audet P., Schaeffer A.J., Schutt D., Aster R.C., Cubley J. The upper mantle structure of northwestern Canada from teleseismic body wave tomography, *AGU 2019*, San Francisco, USA. December 2019.

Estève C., Audet P., Schaeffer A.J., Schutt D., Aster R., Freymueller J., Cubley J. New images of the upper mantle structure beneath northwestern Canada from teleseismic P- and S-wave tomography, *IUGG 2019*, Montreal, Canada. July 2019.

Estève C., Schaeffer A.J., Audet P. Upper mantle structure underlying the diamondiferous Slave craton from teleseismic body-wave tomography, *Ottawa Carleton Student Northern Research Symposium*, Ottawa, Canada. March 2019.

Estève C., Schaeffer A.J., Audet P. Upper mantle structure underlying the diamondiferous Slave craton from teleseismic body-wave tomography, *Yellowknife Geoscience Forum*, Yellowknife, Canada. November 2018.

Estève C., Schaeffer A.J., Audet P. Upper mantle structure beneath the diamondiferous central Slave craton, Canada, from teleseismic body-wave tomography, *2018 AESRC*, Ottawa, Canada. March 2018.

## Poster presentation

Schaeffer, A.J, Audet P., Cairns S., Elliott B., Falck H., Bostock M., Darbyshire F., Estève, C., Snyder D., Investigating the crust and mantle surrounding the Beaufort Sea, western Canadian Arctic, *IUGG 2019*, Montreal, Canada. July 2019.

Estève, C., Schaeffer, A.J., & Audet, P. New image of upper mantle structure beneath western Canada from teleseismic body-wave tomography, *AGU Fall Meeting*. Washington DC, USA. December 2018.

Schaeffer, A.J., Audet, P., Cairns, S., Elliott, B., Falck, H., Darbyshire, F., Bostock, M.G., & Estève, C. New constraints on crust and mantle structure surrounding the Beaufort Sea, western Canadian Arctic, from a new broadband seismic array. *AGU Fall Meeting*, Washington DC, USA. December 2018.

Estève C., Schaeffer A.J., Audet P. Upper mantle structure underlying the diamondiferous Slave craton, Canada, from teleseismic body-wave tomography. *CGU Niagara*, Canada. June 2018.

Estève C., Schaeffer A.J., Audet P. New constraints on upper mantle structure underlying the diamondiferous central Slave craton, Canada, from teleseismic body-wave tomography. *AGU Fall Meeting* New Orleans, USA. December 2017.

Estève C., Schaeffer A.J., Audet P., Murray-Bergquist L., Cairns S., Elliott B., Falck H. and Snyder D. A preliminary teleseismic investigation of the crust and mantle lithosphere obtained from BISN in the western Canadian Arctic. *CGU Vancouver*, Canada. June 2017.

Snyder, D., Cairns, S., Elliott, B., Schaeffer, A.J., Audet, P., Estève, C., Murray-Bergquist, L., & Falck, H. A preliminary teleseismic investigation of the crust and mantle lithosphere obtained from BISN in the western Canadian Arctic. *AGU Fall Meeting*, San Francisco, USA. December 2016.