

## **Curriculum Vitae**

### **Cong Li**

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#### **Education**

- 2016-2021*     University of Massachusetts, Amherst, MA, U.S.A  
                    Ph. D. in Geology and Geophysics
- 2011-2014*     Institute of Crustal Dynamics, China Earthquake Administration  
                    M.S. in Geology and Geophysics
- 2007-2011*     Ocean University of China  
                    B.S. in Geophysics

#### **Research Interests**

- Observational seismology; Seismic imaging
- Formation and evolution of continental lithosphere
- Subduction zone dynamics and processes
- Near-surface crustal structures and their relationship with seismicity

#### **Research/Work Experience**

- 2023-Present*     Research Associate, Southern University of Science and Technology, China
- 2021-2023*        Postdoctoral Fellow, Southern University of Science and Technology, China

#### **Awards & Honors**

- Overseas High-Caliber Personnel Award in Shenzhen, China, 2021
- 9<sup>th</sup> SUSTech Presidential Postdoctoral Fellowship, Southern University of Science and Technology, 2021
- Joseph Hartshorn Memorial Scholarship, University of Massachusetts, Amherst, 2019
- Andrew D. Wise Memorial Scholarship, University of Massachusetts, Amherst, 2018
- EarthScope National Meeting Student Scholarship (Travel Award), 2017
- Distinguished undergraduate, Ocean University of China, 2007

#### **Publications**

##### **I.     Peer-reviewed Papers**

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13. Li, C., & Gao H., (2023a). Seismic evidence for metamorphic densification of the lower continental crust in eastern North America. Journal of Geophysical Research: Solid Earth.128(6). doi:10.1029/2023JB02660212.
12. Li, C., & Gao, H. (2021). Modification of crust and mantle lithosphere beneath the southern part of the eastern North American passive margin. Geophysical Research Letters, 48(16). doi:10.1029/2020GL090555.
11. Gao, H., & Li, C. (2021). Lithospheric formation and evolution of eastern North American continent. Geophysical Research Letters, 2021, 48(5). doi:10.1029/2020GL091074.
10. Hillenbrand, I., W., Williams, M., L., Li, C., Gao, H. (2021). Rise and fall of the Acadian altiplano: Evidence for a Paleozoic orogenic plateau in New England. Earth and Planetary Science Letters, 560. doi:10.1016/j.epsl.2021.116797.
9. Li, C., Gao H., Williams M. L. (2020). Seismic characteristics of the eastern North American crust with Ps converted waves: terrane accretion and modification of continental crust. Journal of Geophysical Research: Solid Earth. doi: 10.1029/2019JB018727
8. Lv, Z., Gao, H., Lei, J., Yang, X., Rathnayaka, S., Li, C. (2019). Crustal and upper mantle structure of the Tien Shan orogenic belt from full-wave ambient noise tomography. Journal of Geophysical Research: Solid Earth. doi: 10.1029/2019JB017387
7. Yang, X., Gao, H., Rathnayaka, S., Li, C. (2019). A comprehensive quality analysis of empirical Green's functions at Ocean Bottom Seismometers in Cascadia. Seismological Research Letters. doi:10.1785/0220180273
6. Li, C., Gao H., Williams M. L., Levin V. (2018). Crustal thickness variation in the northern Appalachian Mountains: Implications for the geometry of 3D tectonic boundaries within the crust. Geophysical Research Letters,45. doi:10.1029/2018GL078777 \*News coverage in UMass News &Media Relations\*
5. Ming, J., Liu, L., Ding, Y., Li, C. (2015). Wavelet deconvolution with spatial consistency based on CRP gathers (in Chinese). Lithologic Reservoirs.

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4. Li, C., & Lei, J. (2014). Numerical tests for effects of various parameters in niching genetic algorithm applied to regional waveform inversion. *Earthquake Science*, 27(541). doi:10.1007/s11589-014-0095-7
3. Li, C., & Lei, J. (2014). Crustal velocity structure under southwestern Yunnan from regional waveform inversion (in Chinese). *Chinese Science Bulletin*, 59(34), 3398-3415. doi:10.1360/N972014-00407
2. Zha, X., Sun, C., Li, C. (2013). The effects of dipping interface and anisotropic layer on the result of H-k method (in Chinese). *Progress in Geophysics*, 28(1): 121-131. doi: 10.6038/pg20130113
1. Sun, C. Q., Lei, J., Li, C., Zhang, G., Zha, X, Li, F. (2013). Crustal anisotropy beneath the Yunnan region and dynamic implications (in Chinese). *Chinese Journal of Geophysics*, 56(12), 4095-4105. doi: 10.6038/cjg20131214

### **III. Manuscripts in Preparation/Review**

- Li, C., & Yu, C. (2023b). Seismic evidence for crustal magmatic intrusion beneath the southern part of the eastern North American margin. *In review*.
- Li, C., Yu, C., Hu, J. (2023c). High-resolution crustal and upper mantle structures beneath southeastern Tibetan Plateau revealed by full-wave ambient noise tomography. *In review*.
- Li, C., Yu, C., Yao, H., Liu, Y. (2024). Comparison and validation of shear-wave velocity models in southeastern Tibetan Plateau. *In prep*.

### **Funded Grants**

- Li, C., National Natural Science Foundation of China (42104052), Youth Science Foundation Project, High-resolution crustal and upper mantle structures beneath the southeastern Tibet Plateau revealed by a combination of multimodal Rayleigh waves inversion and full-wave ambient noise tomography, 2022-2023, *host*.
- Li, C., China Postdoctoral Science Foundation, 71th General Fund (2022M711473), Joint inversion of multimodal surface wave dispersion and waveform, 2022-2023, *host*.

### **Conference Presentations**

#### **I. Oral talk**

8. High-resolution crustal and upper mantle structures beneath southeastern Tibetan Plateau revealed by full-wave ambient noise tomography, 2023 AGU23 fall meeting. San Francisco, CA

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7. Comparison and validation of Shear-wave velocity models in southeastern Tibetan Plateau, 2023  
Annual Meeting of Chinese Geoscience Union (CGU); Zhuhai, China
6. High-resolution crustal structure across the eastern North American passive margin from a combination of multimodal Rayleigh waves inversion and full-wave ambient noise tomography at 2022 AGU. Online talk.
5. **(Invited)** Mapping crustal deformation and anisotropy beneath eastern North America using harmonic decomposition of P wave receiver functions, 2020 *GSA Southeastern and Northeastern Joint Section Meeting*. Reston, VA.
4. **(invited)** Seismic characteristics of the eastern North American crust with Ps converted waves: Terrane accretion and modification of continental crust, 2020 *Global Scientist Interdisciplinary Forum* held by Southern University of Science and Technology (SUSTech). Shen Zhen, China.
3. Seismic characteristics of the eastern North American crust with Ps converted waves: Terrane accretion and modification of continental crust, 2019 *Seismological Society of America Annual Meeting*. Seattle, WA.
2. Modification of the continental crust in eastern North America revealed by Ps converted waves, 2019 Northeastern Section 54th GSA Annual Meeting. Portland, ME.
1. Crustal thickness variation in the northern Appalachian Mountains: Implications for the geometry of 3D tectonic boundaries within the crust, at 2018 Northeastern Section 53rd GSA Annual Meeting. Burlington, VT.

## **II. Poster presentation**

10. Modification of crust and mantle lithosphere beneath the southern part of the eastern North American passive margin at 2021 AGU. New Orleans, LA.
9. Seismic characteristics of the crust and mantle lithosphere in the eastern North American margin revealed from full-wave ambient noise tomography, at 2019 AGU. San Francisco, CA.
8. Seismic characteristics of the eastern North American crust with Ps converted waves: Terrane accretion and modification of continental crust, at 2019 Gordon Research Conferences on interior of the Earth. South Hadley, MA.

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7. Depth distributions of major velocity discontinuities beneath eastern North America with Ps converted waves, at 2018 American Geophysical Union (AGU) Fall Meeting. Washington, DC.
6. Crustal thickness variations in eastern North America: Implications for the geometry of 3D tectonic boundaries within the crust, at 2018 IRIS Workshop. Albuquerque, NM.
5. Lithospheric structure of the eastern North American margin resolved by teleseismic receiver function analysis, at 2017 AGU Fall Meeting. New Orleans, LA.
4. Preliminary seismic velocity structure in the eastern North American margin from joint inversion of offshore and onshore data, at 2017 OBS Symposium, Portland, ME.
3. Resolving crustal structure beneath the northern Appalachians using teleseismic receiver function analysis, at 2017 EarthScope National Meeting. Anchorage, AK.
2. Resolving crust structure beneath the northeastern United States using Ps receiver function analysis, at 2017 Seismological Student Workshop. New York city, NY.
1. Forward modeling of receiver functions for dipping and anisotropic structures, at 2016 Seismological Student Workshop. New York city, NY.

## **Professional Services**

- **Liaison** for outstanding student presentation award at AGU Fall Meeting, 2019
- **Primary convener and chair** of 2019 AGU Fall Meeting session “T44B. A multidisciplinary understanding of the formation and evolution of the continental lithosphere in collisional orogens”, 2019
- **Co-convener** of 2017 AGU Fall Meeting session “T14A. Eastern North American Margin: Multidisciplinary Studies”, 2017
- **Journal Reviewer:** Journal of Geophysical Research: Solid Earth, Tectonophysics

## **Teaching & Mentoring Experience**

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- Graduate Teaching Assistant, University of Massachusetts, Amherst  
Course: Geology 101 Lab
- Mentoring
  - Meng Liu, M.S./Ph.D. student, (Full-wave ambient noise tomography in South America, Jan. 2018 - present)
  - Richard Tour and Amelia Midgley, work-study undergraduate students.
  - Alina Valdez Lopez, M.S. student, (Receiver function imaging in the northwestern U.S., Jan. 2019 - present)
  - Ziqiang lv, visiting scholar, (Full-wave ambient noise tomography and P wave receiver function analysis in Tien Shan orogenic belt, 01/ 2017 – 01/ 2018;)
  - Lihong Zhao (P wave receiver function analysis, Jan. 2017-Jan. 2018)
- Volunteer instructor for the Eureka! Girls workshops for the 8<sup>th</sup> to 12<sup>th</sup>-grade under-represented students: *Earthquakes traveling through the Earth*, UMass Amherst, 2018-present.

## Computing Skill

- **Software developed:** Harmonic decomposition analysis of P wave receiver functions package (written in MATLAB); P wave receiver function imaging package (written in MATLAB); Multimodal surface waves extraction and inversion package (written in Python); Measurement of phase delay time between synthetic and observed waveforms (written in MATLAB)
- **Software mastered:** Antelope Datascope Database, Seismic Analysis Code (SAC), ParaView, 3D Visualizer, GMT, Petrel
- **Programming languages:** C, C++, Fortran, Visual Basic, Python, MPI, Unix Shell, MATLAB
- **High-Performance Computing:** Parallel computing resources at the Massachusetts Green High-Performance Computing Center and at the Southern University High-Performance Computing Center

## Field Experiences

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- Aug. 25<sup>th</sup>-Sep. 13<sup>th</sup>, 2019 Alaska, the United States. Alaska Amphibious Community Seismic Experiment led by Geoffrey Abers (Cornell University) and Peter Haeussler (USGS). Role: **Field Assistant**.
  - Collected sound velocity profiles using eXpendable BathyThermographs (XBT)
  - Inspected sound velocity data and removed extraneous soundings
  - Collected and processed bathymetry data
  - Recovered 25 broadband OBS and 5 Keck OBS (with strong motion sensor)
  - Conducted quality assurance of seismic waveform records with Antelope Datascope Database
- Aug. 11-15<sup>th</sup>, 2018 Western Massachusetts, the United States. Southern New England geophysics/geology field trip and workshop, led by Maureen Long (Yale University), Vadim Levin (Rutgers University), Haiying Gao (UMass), Michael Williams (UMass) and Yvette Kuiper (Colorado School of Mines), Role: **Field Assistant**.
  - Map the Acadian deformation Front
  - Integration of geophysical and geology studies
- Oct. 14-16<sup>th</sup>, 2017 Southern Maine, the United States. New England intercollegiate geological field trip. Role: **Participant**.
- Oct. 20-25<sup>th</sup>, 2009 Qingdao, Shandong, China. Offshore geology/oceanography cruise. Role: **Participant**.