Curriculum Vitae

Cong Li

Postdoctoral, Department of Geosciences, University of Arizona, U.S.A.
Email: congli87@arizona.edu

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
- Evolution and deformation of continental lithosphere
- Subduction zone dynamics and processes
- Near-surface crustal structure and its relationship with seismicity

Research/Work Experience

2021-2023 Postdoctoral Fellow, Southern University of Science and Technology, China
2023-2024 Researching Assistant Professor, Southern University of Science and Technology, China
2024-Now Postdoctoral Associate, University of Arizona, U.S.A

Awards & Honors

- 9th 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

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**: Geophysical Research Letters, Journal of Geophysical Research: Solid Earth, Tectonophysics, G-Cube (Geochemistry, Geophysics, Geosystems), NSF Proposal.

Publications

I. Peer-reviewed Papers

15. **Li, C.,** Yu, C., Hillenbrand, I., & Zhang, W. (2024b). Three-dimensional crustal channel flows beneath the southeastern Tibetan Plateau revealed by full-waveform ambient noise tomography. *Geophysical Research Letters,* 51, e2024GL110704. https://doi.org/10.1029/2024GL110704

14. **Li, C.,** & Yu, C. (2024a). Seismic evidence for crustal magmatic intrusion beneath the southern part of the eastern North American margin. *Journal of Geophysical Research: Solid Earth*, 129, e2023JB028143. https://doi.org/10.1029/ 2023JB028143

13. **Li, C.**, & Gao H., (2023). 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.*

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-κ 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., (2025a). Comparison and validation of shear-wave velocity models in southeastern Tibetan Plateau. *In prep*.
- **Li, C.,** & Beck, S. L. (2025b). Imaging the subducting Carnegie Ridge and the Ecuadorian forearc using teleseismic receiver functions. *In prep*.
- **Li, C.,** & Beck, S. L. (2025c). High-resolution Ecuadorian forearc and arc lithosphere structures revealed by joint inversion of receiver functions and surface wave from ambient noise and earthquakes. *In prep*.

Conference Presentations

I. Oral talk

11. Seismic imaging of the Ecuadorian forearc and arc lithosphere using teleseismic receiver functions analysis and ambient noise tomography, *2025, SSA annual meeting.* Baltimore, MD

10. ***(Invited)*** High-resolution seismic imaging of crustal and upper mantle structures across the southern Eastern North American passive margin, *2025, SSA annual meeting.* Baltimore, MD

9. ***(Invited)*** Role of suture zone on the evolution of orogenic belts, *2025, Department of Earth, Atmospheric, and Planetary Sciences, Purdue University.* West Lafayette, IN

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

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, *2022*, *AGU fall meeting*. 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.

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.

Teaching & Mentoring Experience

- 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 8th to 12th-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); FuncLab (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

- Aug. 25th-Sep. 13th, 2019 Alaska, the United States. Alaska Amphibious Community Seismic Experiment leaded 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. 11-15th, 2018 Western Massachusetts, the United States. Southern New England geophysics/geology field trip and workshop, leaded 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. 14-16th, 2017 Southern Maine, the United States. New England intercollegiate geological field trip. Role: **Participant.**
- Oct. 20-25th, 2009 Qingdao, Shandong, China. Offshore geology/oceanography cruise. Role: **Participant.**