Chuanming Liu

PROFESSIONAL APPOINTMENTS

Assistant Professor, Department of Geological Sciences, University of Missouri-Columbia 1/2026-

Distinguished Postdoctoral Fellow, Jackson School of Geosciences, The University of Texas at Austin 8/2023-12/2025

EDUCATION

Ph.D., in Geophysics, University of Colorado at Boulder 2017 - 2023

M.S., in Geophysics, University of Science and Technology of China 2014 - 2017

B.S., in Geophysics, China University of Geosciences 2010 - 2014

ACADEMIC HONORS

- UT Austin Jackson School of Geosciences Distinguished Postdoctoral Fellowship 2023
- EarthScope Consortium Marine Seismology Travel Support 2022
- American Geophysical Union Outstanding Student Presentation Award 2021
- Chinese Geophysical Society Outstanding Student Presentation Award 2015
- The Liu Guang-Ding Geophysics Scholarship 2012
- National Scholarship 2011

PUBLICATIONS

Peer reviewed

1. Liu, X., **Liu, C.**, & Ritzwoller M.H. (2025) The Characteristics of Rayleigh and Love Wave AzimuthalAnisotropy: Observations Across Alaska, *Journal of Geophysical Research: Solid Earth*, https://doi.org/10.1029/2025JB032042
2. **Liu, C.**, Becker, T.W., Wu, M., Han, S., & Ritzwoller M.H. (2024) Seismic Azimuthal Anisotropy Within the Juan de Fuca - Gorda Plates, *Geophysical Research Letters,* https://doi.org/10.1029/2024GL111835
3. Zheng, M., Sheehan, A. F., **Liu, C.**, Wu, M., & Ritzwoller, M. H. (2024). Characterizing Sub-Seafloor Seismic Structure of the Alaska Peninsula Along the Alaska-Aleutian Subduction Zone. *Journal of Geophysical Research: Solid Earth*, *129*(11). https://doi.org/10.1029/2024jb029862
4. **Liu, C.**, Sheehan A.F., Ritzwoller M.H. (2024) Seismic Azimuthal Anisotropy Beneath the Alaska-Aleutian Subduction Zone, *Geophysical Research Letters, 51,* https://doi.org/10.1029/2024GL109758
5. **Liu, C.**, & Ritzwoller, M. H. (2024). Seismic anisotropy and deep crustal deformation across Alaska. *Journal of Geophysical Research: Solid Earth*, *129*. https://doi.org/10.1029/2023JB028525
6. **Liu, C.**, Zhang, S., Sheehan, A. F., & Ritzwoller, M. H. (2022). Surface Wave Isotropic and Azimuthally Anisotropic Dispersion Across Alaska and the Alaska-Aleutian Subduction Zone. *Journal of Geophysical Research: Solid Earth*, *127*(11). https://doi.org/10.1029/2022jb024885
7. Bem, T. S., **Liu, C.**, Yao, H., Luo, S., Yang, Y., & Liu, B. (2022). Azimuthally Anisotropic Structure in the Crust and Uppermost Mantle in Central East China and Its Significance to Regional Deformation Around the Tan-Lu Fault Zone. *Journal of Geophysical Research: Solid Earth*, *127*(3). https://doi.org/10.1029/2021jb023532
8. Z Zhang, Z., Yao, H., Wang, W., & **Liu, C.** (2022). 3-D Crustal Azimuthal Anisotropy Reveals Multi-Stage Deformation Processes of the Sichuan Basin and Its Adjacent Area, SW China. *Journal of Geophysical Research: Solid Earth*, *127*(1). https://doi.org/10.1029/2021jb023289

9. Feng, L., **Liu, C.**, & Ritzwoller, M. H. (2020). Azimuthal Anisotropy of the Crust and Uppermost Mantle Beneath Alaska. *Journal of Geophysical Research: Solid Earth*, *125*(12). https://doi.org/10.1029/2020jb020076
10. **Liu, C.**, Yao, H., Yang, H., Shen, W., Fang, H., Hu, S., & Qiao, L. (2019). Direct Inversion for Three-Dimensional Shear Wave Speed Azimuthal Anisotropy Based on Surface Wave Ray Tracing: Methodology and Application to Yunnan, Southwest China. *Journal of Geophysical Research: Solid Earth*, *124*(11), 11394–11413. https://doi.org/10.1029/2018jb016920
11. **Liu, C.**, & Yao, H. (2017). Surface Wave Tomography with Spatially Varying Smoothing Based on Continuous Model Regionalization. Pure and Applied Geophysics, 174(3), 937–953. https://doi.org/10.1007/s00024-016-1434-5

GRANTS

UT Austin JSG Distinguished Postdoctoral Fellowship, $150k, PI: Chuanming Liu 2023-2025

- 3D Variation of Seismic Anisotropy across the Juan de Fuca Plate System and the Cascadia Subduction zone

NSF Grants EAR-1928395, $295k, PI: Michael Ritzwoller 2019-2021

- Seismic Interferometry and Data Assimilation for Lithospheric Structure and Anisotropy Across Alaska

  C. Liu contributed the scientific justification of the proposal and executed the work.

NSF Grants EAR-1952209, $363k, PI: Anne Sheehan, CO-PI: Michael Ritzwoller 2020-2023

- 3D Characterization of the Alaska-Aleutian Subduction System with Amphibious Array Interferometry

  C. Liu contributed the scientific justification of the proposal and executed the work.

INVITED TALKS

- UTIG seminar, University of Texas Institute for Geophysics, 04/2024
- News from the Alaska Subduction Zone virtual seminar, 11/2023
- School of Earth and Space Sciences seminar, University of Science and Technology of China, 10/2023
- School of Geophysics and Geomatics seminar, China University of Geosciences, 10/2023
- Lithosphere and Deep Earth (LDE) seminar, The University of Texas at Austin, 09/2023
- IRIS Alaska EarthScope synthesis, 04/2022
- Seismology Algorithms and Programs Workshop, University of Science and Technology of China, 08/2020

CONFERENCE PRESENTATIONS

- The Crust and Uppermost Mantle Anisotropy Model across Alaska and Alaska Subduction Zone. Passive imaging and monitoring in wave physics workshop, 2024
- Depth-dependent Seismic Azimuthal Anisotropy Beneath the Aleutian Subduction Zone and the Juan de Fuca-Gorda Plates. SSA Meeting (oral), 2024
- Depth-dependent Seismic Azimuthal Anisotropy Beneath the Juan de Fuca-Gorda Plates. AGU Fall Meeting (oral), 2023
- The Contrast of Depth-Dependent Seismic Azimuthal Anisotropy Beneath Alaska-Aleutian and Cascadia Subduction Systems. AGU Fall Meeting (oral), 2022
- Inferring Crustal and Uppermost Mantle Seismic Anisotropy across Alaska with Surface Wave Observations. AGU Fall Meeting (oral), 2021
- Radial and Azimuthal Anisotropy of the Crust and Uppermost Mantle Beneath Alaska Inferred from Surface Waves. AGU Fall Meeting, 2019
- Assimilating New Types of Data in Inversions for Lithospheric Shear Velocity Structure. AGU Fall Meeting, 2018
- Direct Inversion of Surface Wave Dispersion for Three-dimensional Crustal Azimuthal Anisotropy Based on Frequency-Dependent Ray Tracing. AGU Fall Meeting, 2016

TEACHING EXPERIENCE

Instructor

Planet Earth (2026, Spring, University of Missouri)

Guest Lecturer

Physics of the Earth (2024, Spring, UT Austin)

Tectonic Geodynamics (2025, Spring, UT Austin)

Physics of the Earth (2025, Spring, UT Austin)

Teaching Assistant

Physics 1110; General Physics I (2020, Spring, CU Boulder)

Physics 1120; General Physics II (2019, Spring, CU Boulder)

Physics 1140; Experimental Physics I (2017, Fall; 2018, Spring, CU Boulder)

PROFESSIONAL SERVICE

Reviewer for Journals: *Journal of Geophysical Research: Solid Earth* (6), *Geophysical Journal International* (7), *Geophysical Research Letters* (3), *Tectonophysics* (1), *Communications Earth & Environment* (3), *Solid Earth* (2), *Geoscience letters* (2), *IEEE Transactions on Geoscience and Remote Sensing* (2), *Scientific Reports* (2), Computers and Geosciences (1)