

Chuanming Liu

University of Texas Institute for Geophysics & Department of Earth and Planetary Sciences

Jackson School of Geosciences

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EDUCATION

Ph.D., in Geophysics, University of Colorado at Boulder (Advisor: Michael Ritzwoller) 2017 - 2023

M.S., in Geophysics, University of Science and Technology of China (Advisor: Huajian Yao) 2014 - 2017

B.S., in Geophysics, China University of Geosciences (Advisor: Yinhe Luo) 2010 - 2014

PROFESSIONAL APPOINTMENTS

Distinguished Postdoctoral Fellow, The University of Texas at Austin (Mentor: Thorsten Becker) 2023.8-

RESEARCH INTERESTS

- Seismic imaging and inversion; Seismic anisotropy; Surface wave tomography; Ambient noise
- Ocean bottom seismometer (OBS) seismic imaging; Subduction zone structure

ACADEMIC HONORS

- UT Austin Jackson School of Geosciences Distinguished Postdoctoral Fellows 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
- China National Scholarship for Undergraduate Students 2011

PUBLICATIONS

Peer reviewed

1. **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>
2. **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>
3. 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>
4. 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>
5. 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>
6. **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.

7. **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>

In prep

1. **C. Liu**, T.W. Becker, M.H. Ritzwoller, Depth-Dependent Seismic Azimuthal Anisotropy beneath the Juan de Fuca and Gorda Plates, (2024)
2. **C. Liu**, A.F. Sheehan, M.H. Ritzwoller, Seismic Azimuthal Anisotropy Beneath the Alaska-Aleutian Subduction Zone, (2024)

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

CL contributed the scientific justification of the proposal and executed the work.

NSF Grants EAR-1952209, \$363k, PI: Anne Sheehan, CO-PI: Michael Ritzwoller 2020-2024

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

CL 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

- Depth-Dependent Seismic Azimuthal Anisotropy beneath the Juan de Fuca and 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

Guest Lecturer

Physics of the Earth (2024, 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

Solid Earth	2020-
Geophysical Journal International	2022-
Journal of Geophysical Research: Solid Earth	2022-
Geophysical Research Letters	2024-
Tectonophysics	2024-