Xueyan Li

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Education

Ph.D. in Geosciences *University of Texas at Dallas, USA* 08/2016 - 10/2022

- Supervisor: Prof. Hejun Zhu
- Research direction: Seismic structures beneath Australia using full-waveform inversion

B.S. in Geophysics *Peking University* 09/2012 - 07/2016

- Supervisor: Prof. Yanbin wang
- Research topics: 2D Finite difference modeling incorporating surface topography

Work Experience

Geophysicist Intern at Conocophillips 05/2018 - 08/2018

- Implemented a time-domain visco-acoustic modeling scheme in TTI media using rational fractions approximation.
- Further improved the finite difference stencils to reduce numerical dispersion in wave simulation.
- Participated in production Q Kirchhoff migration workflow.

Research Experience

- Pure quasi-P wave modeling in transversely isotropic (TI) media.
- Seismic structures beneath Australia using full waveform inversion.
- Moment tensor inversion of intermediate depth deep earthquakes at the Tonga subduction zone.
- Time-lapse velocity change at NE New Zealand measured from ambient noise auto-correlation.

Honors

Anton Hales Fellowship 2021

Leadership

President of the SEG student chapter at UT Dallas 01/2018 - 12/2018
Vice president of the SEG student chapter at UT Dallas 01/2017 - 12/2017

Publications

8. Li, X., & Zhu, H. Moment tensor inversion of deep earthquakes beneath the Tonga subduction zone, *in prep.*
7. Li, X., & Zhu, H. Lithospheric layering of Australian lithosphere from azimuthal anisotropy, *in prep.*
6. Li, X., & Zhu, H. Radial anisotropy of Australian plate using full waveform inversion, *Journal of Geophysical Research: Solid Earth, submitted*
5. Zhu, H., **Li, X.**, Yang, J., Stern, R. J., Lumley, D. E. (2020). Poloidal-and Toroidal-Mode Mantle Flows Underneath the Cascadia Subduction Zone. *Geophysical Research Letters*, 47(14), e2020GL087530.
4. Yang, J., Zhu, H., **Li, X.**, Ren, L., Zhang, S. (2020). Estimating P Wave Velocity and Attenuation Structures Using Full Waveform Inversion Based on a Time Domain Complex-Valued Viscoacoustic Wave Equation: The Method. *Journal of Geophysical Research: Solid Earth*, 125(6), e2019JB019129.
3. Zhu, H., Yang, J., **Li, X.** (2020). Azimuthal anisotropy of the North American upper mantle based on full waveform inversion. *Journal of Geophysical Research: Solid Earth*, 125(2), e2019JB018432.
2. Li, X., & Zhu, H. (2018). A finite-difference approach for solving pure quasi-P wave equations in transversely isotropic and orthorhombic media. *Geophysics*, 83(4), 1-45.
1. Li, X., Wang, Y., & Chen, Y. J. (2016). Inversion of ocean-bottom seismometer (OBS) waveforms for oceanic crust structure: a synthetic study. *Earthquake Science*, 29(4), 203-213.

Invited Presentations

"Moment tensor inversion for deep earthquakes at the Tonga-Kermadec subduction zone using 3-D Green's functions", Center for Tectonics and Tomography, University of Houston, USA, Mar. 2021
"Moment tensor inversion for deep earthquakes at the Tonga-Kermadec subduction zone using 3-D Green's functions", SCEC 2020 Annual Meeting, USA, Sept. 2020
"Seismic anisotropy beneath the Tonga Subduction Zone based on adjoint tomography", Seismology Student Workshop at Lamont-Doherty Earth Observatory, USA, Mar. 2020
"Seismic anisotropy beneath the Tonga Subduction Zone using full-waveform inversion", Center for Tectonics and Tomography, University of Houston, USA, Nov. 2019

Community Involvement

Reviewer for *JAG (Journal of Applied Geophysics)*, *Geophysics*, *GRL*, *SRL*, *JGR: Solid Earth*, & *GJI*
SEG student member 2016 - present
AGU student member 2018 - present

Skills

Programming Language: Fortran, C, C++, Matlab, shell script, Python
Software: SPECFEM3D_GLOBE, ASPECT, SeisSpace, Eclipse