

XIAOZHUO WEI

email

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APPOINTMENT

2023 – Now Barr's Foundation Postdoctoral Fellow
Seismological Laboratory, California Institute of Technology

EDUCATION

2017 – 2023 Doctor of Philosophy, Geological Oceanography
Graduate School of Oceanography, University of Rhode Island

2014 – 2017 Master of Science, Geophysics
Institute of Geology and Geophysics, Chinese Academy of Sciences

2010 – 2014 Bachelor of Science, Geophysics
School of Earth and Space Science, Peking University

PUBLICATIONS

X. Wei, Y. Shen (2023), Comment on "Seismic Velocity Variations at Different Depths Reveal the Dynamic Evolution Associated With the 2018 Kilauea Eruption" by Liu et al., *Geophys. Res. Lett.*, doi: 10.1029/2022GL102596.

X. Wei, Y. Shen, and J. K. Morgan (2023), Shallow volcano-tectonic structures on the Island of Hawai'i imaged by multimode Rayleigh wave ambient noise tomography, *J. Geophys. Res. Solid Earth*, doi: 10.1029/2022JB026244.

B. He, X. Wei, M. Wei, Y. Shen, M. Alvarez, and S. Schwartz (2023), A shallow slow slip event in 2018 in the Semidi segment of the Alaska subduction zone detected by machine learning, *Earth Planet. Sci. Lett.*, 612: 118154, doi: 10.1016/j.epsl.2023.118154.

X. Wei, Y. Shen (2022), P waves emerged from ambient noise cross-correlation post the 2018 Kilauea eruption revealing middle crust velocity discontinuities beneath the Island of Hawai'i, *Geophys. Res. Lett.*, 49(16): e2022GL098470, doi: 10.1029/2022GL098470.

X. Wei, Y. Shen, J. Caplan-Auerbach, and J. K. Morgan (2022), An improved earthquake catalog during the 2018 Kilauea eruption from combined onshore and offshore seismic arrays, *Earth Space Sci.*, 9(6): e2021EA001979, doi: 10.1029/2021EA001979.

X. Wei, Y. Shen, J. Caplan-Auerbach, and J. K. Morgan (2021), An OBS array to Investigate the Offshore Seismicity during the 2018 Kilauea Eruption, *Seismol. Res. Lett.*, 92(1): 603-612, doi:10.1785/0220200206.

X. Z. Wei, M. Jiang, L. Chen, X. Wang (2018), New VDSS method based on dense linear array and its applications, *Prog. in Geophys.* (in Chinese with English abstract), 33(3): 986-992, doi: 10.6038/pg2018BB0201.

X. Wei, M. Jiang, X. Liang, L. Chen, and Y. Ai (2017), Limited southward underthrusting of the Asian lithosphere and material extrusion beneath the northeastern margin of Tibet, inferred from teleseismic Rayleigh wave tomography, *J. Geophys. Res. Solid Earth*, 122(9): 7172-7189, doi:10.1002/2016JB013832.

M. Wang, Q. Liu, S. Nie, B. Li, Y. Wu, J. Gao, X. Wei, and X. Wu (2015), High-pressure Phase transitions and compressibilities of aragonite-structure carbonates: SrCO₃ and BaCO₃, *Phys. Chem. Miner.*, 42: 517-527, doi: 10.1007/s00269-015-0740-2.

ARTICLES IN PROGRESS

J. Li, E. Biondi, E. Heimisson, S. Puel, Q. Zhai, S. Zhang, V. Hjörleifsdóttir, X. Wei, E. Bird, A. Klesh, V. Kamalov, Theodór Gunnarsson, H. Geirsson, Z. Zhan, Complex dynamics of repeated dike intrusions in Iceland revealed by fiber-optic sensing, *Science*, **submitted**.

E. Bird, J. Atterholt, J. Li, E. Biondi, Q. Zhai, L. Li, Y. Yang, X. Wei, V. Hjörleifsdóttir, A. Klesh, V. Kamalov, T. Gunnarsson, and Z. Zhan, Constraining Dike Opening Models with Seismic Velocity Changes Associated with the 2023-2024 Eruption Sequence on the Reykjanes Peninsula, *AGU Adv.*, **submitted**.

ARTICLES IN PREPARATION

X. Wei, J. Li, Q. Zhai, E. Biondi, E. Bird, V. Hjörleifsdóttir, A. Klesh, V. Kamalov, T. Gunnarsson, and Z. Zhan, Tracking the complex dike intrusion during the 2023-2024 Sundhnúkur eruptions with a single telecommunication fiber, *Geophys. Res. Lett.*, **in prep**.

X. Wei, Y. Shen, F.-C. Lin, and J. Farrell, Imaging the magma pathway within Kilauea's lower East Rift Zone, **in prep**.

MEETING ABSTRACTS

X. Wei, Y. Shen, F.-C. Lin, and J. Farrell (2023), Finite-frequency P-wave tomography reveals a magma mush zone beneath the nodal networks across the Kilauea Lower East Rift Zone, AGU Fall Meeting. (eLightening)

X. Wei, Y. Shen (2023), Teleseismic P wave travel times on dense nodal networks across the Kilauea East Rift Zone reveal two high-speed intrusive cores, SSA Annual Meeting. (Oral)

X. Wei, Y. Shen (2022), P waves emerged from ambient noise cross-correlation post the 2018 Kilauea eruption revealing middle crust velocity discontinuities beneath the Island of Hawai'i, AGU Fall Meeting. (Oral)

X. Wei, Y. Shen (2022), The volcanic unrest of Lō'ihi in 2017: Preliminary results from repeated bathymetric mapping and more complete and relocated earthquake catalog, AGU Fall Meeting. (Poster)

Y. Shen, X. Wei (2022), Strong radial anisotropic structures yield new constraints on the volcanic processes on the Island of Hawai'i, AGU Fall Meeting. (Poster)

M. Wei, B. He, X. Wei, Y. Shen, and M. Alvarez (2022), Use machine learning to detect tectonic movement in seafloor pressure data for seismic and tsunami hazard assessment, AGU Fall Meeting. (Oral, invited)

X. Wei, Y. Shen (2022), An Improved Earthquake Catalog from the Alaska Amphibious Community Seismic Experiment (AACSE), SSA Annual Meeting. (Poster)

X. Wei, Y. Shen (2022), Fundamental and First Higher Mode Rayleigh Wave Ambient Noise Tomography on the Island of Hawai'i, SSA Annual Meeting. (Poster)

X. Wei, Y. Shen (2021), The initiation of the 2018 Kilauea eruption: a perspective from seismicity, AGU Fall Meeting. (Oral)

X. Wei, Y. Shen (2021), First overtone Rayleigh wave observed from ambient noise cross-correlation on the Island of Hawai'i, AGU Fall Meeting. (eLightening)

He, B., X. Wei, M. Wei, Y. Shen, M. Alvarez (2021), A likely slow slip event detected by seafloor pressure data offshore southwest Alaska in 2018, AGU Fall Meeting. (Oral)

X. Wei, Y. Shen, J. Caplan-Auerbach, and J. K. Morgan (2020), An improved earthquake catalog during the 2018 Kilauea eruption from combined onshore and offshore seismic arrays, AGU Fall Meeting. (Poster)

X. Wei, Y. Shen, J. Caplan-Auerbach, and J. K. Morgan (2019), Seismicity of the Kilauea Submarine South Flank Following the 2018 Eruption and Mw 6.9 Earthquake, AGU Fall Meeting. (Oral, invited)

X. Wei, Y. Shen, X. Bao, L. Chen, and M. Jiang (2018), Is it possible to use teleseismic scattered waves to determine the receiver-side stochastic velocity model?, AGU Fall Meeting. (Poster)

X. Wei, M. Jiang, X. Liang, L. Chen, and Y. Ai (2016), Limited southward underthrusting of the Asian lithosphere and material extrusion beneath the northeastern margin of Tibet, inferred from teleseismic Rayleigh wave tomography, AGU Fall Meeting. (Poster)

INVITED SEMINARS & TALKS

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|------------|---|
| 2024.10.01 | Department of Earth and Planetary Sciences Hewett Club Lecture, University of California, Riverside |
| 2024.02.29 | SZ4Grads Spring Webinar Series |
| 2023.04.12 | Department of Ocean Science and Engineering Seminar, Southern University of Science and Technology |

- 2023.03.30 Geophysics Brown Bag Seminar,
California Institute of Technology
- 2022.11.02 Geology & Geophysics Department Seminar,
Woods Hole Oceanographic Institution

AWARDS & SCHOLARSHIP

- 2023 – 2025 Barr's Foundation Postdoctoral Fellowship,
Division of Geology and Planetary Sciences,
California Institute of Technology
- 2024 Travel Support, Short Course on Magnetotellurics, EarthScope
- 2024 Travel Support, Workshop on Mantle Magma Supply and Imaging
Magmatic Systems, SZ4D
- 2023 Travel Support, 2023 GAGE/SAGE Community Science Workshop,
EarthScope Consortium
- 2022 Thomas & Kathy J. McNiff Graduate Student Endowment
in Marine Science Scholarship, Graduate School of Oceanography,
University of Rhode Island
- 2022 Annual Meeting Travel Grant, Seismological Society of America
- 2019 Robert L. McMaster Endowment Scholarship, GSO, URI
- 2019 & 2023 Alumni Travel Award, GSO, URI
- 2016 Sakura Exchange Program Travel Award,
Earthquake Research Institute, University of Tokyo
- 2014 – 2017 Academic Scholarship, Chinese Academy of Sciences
- 2013 Academic Excellence Award, Peking University

TEACHING

- 2024 *Summer* Mentor, California Institute of Technology
Earthquake Fellow program
Mentoring local high school students to hence their understanding of seismology and to perform their own small research projects using their own Raspberry Shake seismometers.
- 2021 *Fall* Teaching Assistant, University of Rhode Island
OCG 108: Living by the Ocean
Grading homework and exams. Giving lectures about the plate tectonics.
- 2020 *Spring* Teaching Assistant, University of Rhode Island
OCG 440 & 540: Geological Oceanography
Organizing lab sessions twice a week. Grading lab reports and exams.
- 2019 *Fall* Teaching Assistant, University of Rhode Island
OCG 131: Volcanoes
Grading homework and exams. Giving lectures when the teaching professor is away.

SERVICES

- 2024 – *Now* Seismological Lab Brown Bag Seminar Organizer, Caltech
- 2023 – *Now* Reviewer, Tectonophysics, JGR: Solid Earth, GJI, SRL
- 2019 – 2020 & 2022 Marine Geology and Geophysics Lecture Organizer, GSO
- 2022 Student Volunteer, AGU Fall Meeting
- 2020 Primary Convener, AGU Fall Meeting

PUBLIC OUTREACH

2021.09 & 2022.09 Volunteer, Science Saturday, GSO
Setting up a Raspberry Shake seismometer alongside a volcano eruption experiment site to demonstrate volcano monitoring.

FIELDWORK & CRUISE EXPERIENCE

- 2024.9 & 11* Temporary Nodal Seismic Array Experiment
Kīlauea, Hawaii, US (18 days)
- 2024.8* Temporary Nodal Seismic Array Experiment
Three Sisters, Oregon, US (5 days)
- 2023.10 & 12* Temporary Nodal Seismic Array Experiment
San Fernando Valley, California, US (2 days)
- 2023.10* Active Source Survey with existing DAS
Ridgecrest, California, US (2 days)
- 2023.01* Investigation of Hydrothermal Vents
R/V Kilo Moana and ROV Jason/Medea, Hawai'i, US (1 week)
- 2018.09-10* Active & Passive Source Marine Seismic Experiment
R/V Langseth, Hawai'i, US (7 weeks)
- 2015.12 & 2016.03* Temporary Broadband Seismic Array Experiment
Inner Mongolia & Heilongjiang province, China (6 weeks)

October 22, 2024