ZHE JIA

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PROFESSIONAL PREPARATION

UT Institute for Geophysics, UT Austin	Research Assistant Professor	2024-present
Scripps Institution of Oceanography, UCSD	Green Postdoc Fellow	2022-2024
California Institute of Technology	Ph.D. (Geophysics)	2019-2022
	M.S. (Geophysics)	2016-2019
Univ. of Science and Technology of China	M.S. (Geophysics)	2013-2016
	B.S. (SCGY)	2009-2013

AWARDS

- China Outstanding Self-Financed Student Award — 2023
- UCSD Cecil H. and Ida M. Green Postdoc Fellowship — 2022
- Seismological Society of America Student Presentation Award — 2022
- Caltech GPS Graduate Fellowship — 2016
- China National Scholarship for Graduate Students — 2015
- USTC Outstanding Undergraduate Student Award — 2013
- USTC Outstanding Undergraduate Student Scholarship — 2011
- USTC Outstanding Freshman Scholarship — 2009

PUBLICATIONS

In review

20. **Jia, Z.**, Shearer, P.M., Fan, W., (2024) Rupture directivity from energy envelope deconvolution: theory and application to 69 Ridgecrest M 3.5–5.5 earthquakes. doi.org/10.31223/X54M7H

19. **Jia, Z.**, Fan, W., Mao, W., Shearer, P.M., (2024) Dual mechanism transition controls rupture development of large deep earthquakes. PDF

18. Kutschera, F., **Jia, Z.**, Oryan, B., Wong, J. W. C., Fan, W., & Gabriel, A. A. (2024). Rapid earthquake-tsunami modeling: The multi-event, multi-segment complexity of the 2024 Mw 7.5 Noto Peninsula Earthquake governs tsunami generation. doi.org/10.31223/X5ZX1S

Peer reviewed

17. **Jia, Z.**, Jin, Z., Marchandon, M., Ulrich, T., Gabriel, A., Fan, W., Shearer, P.M., Zou, X., Rekoske, J., Bulut, F., Garagon, A., Fialko, Y. (2023) The complex dynamics of the 2023 Kahramanmaraş, Turkey, Mw 7.8-7.7 earthquake doublet. *Science. (On cover)*. doi.org/10.1126/science.adi0685 PDF

16. **Jia, Z.**, Zhan, Z., Kanamori, H. (2022) The 2021 South Sandwich Island M_w 8.2 earthquake: a slow event sandwiched between regular ruptures. *Geophysical Research Letters*. doi.org/10.1029/2021GL097104 PDF

15. **Jia, Z.**, Zhan, Z., Helmberger, D. (2022), Bayesian differential moment tensor inversion: theory and application to the North Korea nuclear tests. *Geophysical Journal International*. doi.org/10.1093/gji/ggac053 PDF

14. **Jia, Z.**, Clayton, R. (2021), Determination of near surface shear-wave velocities in the central Los Angeles Basin with dense arrays. *Journal of Geophysical Research: Solid Earth. (On cover)* doi.org/10.1029/2020JB021369 PDF

13. Liu, H., Gurnis, M., Leng, W., **Jia, Z.**, Zhan Z. (2021), Tonga slab morphology and stress variations controlled by a relic slab: Implications for deep earthquakes in the Tonga-Fiji region, *Geophysical Research Letters*. doi.org/10.1029/2020GL091331 PDF

12. **Jia, Z.**, Wang, X., Zhan, Z. (2020), Multifault models of the 2019 Ridgecrest sequence highlight complementary slip and fault junction instability. *Geophysical Research Letters*. doi.org/10.1029/2020GL089802 PDF

11. **Jia, Z.**, Shen, Z., Zhan, Z., Li, C., Peng, Z., Gurnis, M., (2020), The 2018 Fiji Mw 8.2 and 7.9 deep earthquakes: One doublet in two slabs. *Earth and Planetary Science Letters*. doi.org/10.1016/j.epsl.2019.115997 PDF

10. Zhang, X., **Jia, Z.**[*], Ross, Z., Clayton, R. (2020), Extracting dispersion curves from ambient noise correlations using deep learning. *IEEE Transactions on Geoscience and Remote Sensing*. doi.org/10.1109/TGRS.2020.2992043 PDF

9. Bai, Q., Ni, S., Chu, R., **Jia, Z.**[*] (2020), gCAPjoint, A software package for full moment tensor inversion of moderately strong earthquakes with local and teleseismic waveforms, *Seismological Research Letters*. doi.org/10.1785/0220200031 PDF

8. Ross, Z.E., Idini, B., **Jia, Z.**, Stephenson, O.L., Zhong, M., Wang, X., Zhan, Z., Simons, M., Fielding, E.J., Yun, S.H. and Hauksson, E. (2019), Hierarchical interlocked orthogonal faulting in the 2019 Ridgecrest earthquake sequence. *Science*. doi.org/10.1126/science.aaz0109 PDF

7. Zha, X., **Jia, Z.**, Dai, Z., Lu, Z. (2019), The cause of the 2011 Hawthorne (Nevada) earthquake swarm constrained by seismic and InSAR methods. *Journal of Geodesy*. doi.org/10.1007/s00190-018-1212-5 PDF

6. **Jia, Z.**, Ni, S., Chu, R., Zhan, Z. (2017), Joint inversion for earthquake depths using local waveforms and amplitude spectra of Rayleigh waves. *Pure and Applied Geophysics*. doi.org/10.1007/s00024-016-1373-1 PDF

5. Chen, W., Ni, S., Kanamori, H., Wei, S., **Jia, Z.**, Zhu, L. (2015), CAPjoint, a computer software package for joint inversion of moderate earthquake source parameters with local and teleseismic waveforms. *Seismological Research Letters*. doi.org/10.1785/0220140167 PDF

4. **Jia, Z.**, Chen, W., Chu, R. (2013), Preliminary study on aftershock decay rate of the 2013 Ms7.0 Lushan earthquake, *Earthquake Science*. doi.org/10.1007/s11589-013-0050-z PDF

Non-peer reviewed

3. **Jia, Z.**, (2022), Resolving earthquake source complexities in the heterogeneous Earth, Ph.D. Thesis, *California Institute of Technology*. doi.org/10.7907/na72-6395 PDF

2. Zhan Z., **Jia, Z.**, Helmberger, D., (2020), Bayesian differential moment tensor inversion of clustered nuclear tests, *AFRL Technical Report*. PDF

1. **Jia, Z.**, (2016), Joint inversion methods for source parameter determination under point source approximation, M.S. Thesis, *University of Science and Technology of China*. Link

 [*] student mentor

GRANTS

UC San Diego IGPP Green Scholar Award, $138k, PI: Zhe Jia   2022-24

- Understanding earthquakes in diverse earth environments.

USGS Award G19AP00030, $93k, PI: Zhongwen Zhan   2019-20

- Rapid Characterization of First-Order complexity of Large Earthquakes.
    ZJ contributed the scientific justification of the proposal and executed the work.

AFRL Award FA9453-18-C-0058, $200k, PI: Zhongwen Zhan, Don V Helmberger   2018-20

- Bayesian differential moment tensor inversion of clustered nuclear tests.
    ZJ contributed the scientific justification of the proposal and executed the work.

INVITED TALKS

- Bureau Seminar Series, Bureau of Economic Geology, 05/2024
- University of Texas Institute for Geophysics Seminar Series, UTIG, 04/2024
- Seismological Laboratory Seminar Series, Caltech, 10/2023
- Institute of Geology and Geophysics Seminar, Chinese Academy of Sciences, 10/2023
- Hydro90 Community Seminar Series, 09/2023
- Earth and Space Sciences Seminar Series, Southern University of Science and Technology, 09/2023
- Lithospheric Dynamics Seminar Series, University of Southern California, 08/2023
- Symposium on Applied Technologies for Earthquake and Tsunami Monitoring, National Tsunami Warning Center, China, 12/2022
- IGPP Seminar Series, Scripps Institution of Oceanography, 09/2022
- Scripps Institution of Oceanography STOP seminar, 08/2022
- Key Laboratory of Ocean and Marginal Sea Geology seminar, Chinese Academy of Sciences, 07/2022
- Seismological Society of America annual meeting, Bellevue, 04/2022

- Los Alamos National Lab geophysics seminar, 04/2022
- Air Force Research Laboratory Technical Interchange Meeting, 01/2021
- Caltech Special Seismo Lab Seminar on the 2019 Ridgecrest earthquake sequence, 07/2019
- Dept. of Earth and Space Sciences seminar, Southern University of Science and Technology, 03/2019
- Institute of Geodesy and Geophysics seminar, Chinese Academy of Sciences, 03/2019
- School of Earth and Space Sciences seminar, Peking University, 02/2019
- Air Force Research Laboratory Technical Interchange Meeting, 01/2019

MEDIA COVERAGE

- Study traces Turkey quake to interrupted 'chat' between fault lines, The Hindu, 09/2023
- The Unexpected Physics Behind Turkey's Devastating 2023 Earthquakes, UCSD Today, 08/2023
- Study shows California can learn from Turkey's devastating earthquake, KBPS News, 08/2023
- Explaining the Slow Surprise in the Middle of the Sandwich, SSA News, 04/2022
- Source of mysterious global tsunami found near Antarctica, National Geographic, 02/2022
- Unravelling the mystery of the 2021 global tsunami, Daily Mail, 02/2022
- A tsunami caught experts by surprise. Now, they're starting to understand why, NBC News, 02/2022
- Caltech Researchers Uncover Source of Mysterious Tsunami, NBC Los Angeles, 02/2022
- Hidden magnitude-8.2 earthquake source of mysterious 2021 global tsunami, AGU press, 02/2022
- Biggest California earthquake in decades ruptured on at least 24 faults, LA Times, 11/2019
- Caltech, NASA Find Web of Ruptures in Ridgecrest Quake, NASA JPL News, 10/2019
- Lessons from Ridgecrest earthquake sequence, Caltech News, 10/2019
- Unprecedented movement detected on California earthquake fault capable of 8.0 temblor, LA Times, 10/2019
- Many others.

TEACHING EXPERIENCE

Lecturer	SeismoChat (UCSD SIOG-239)	2022-23
Guest Lecturer	Introduction to Geophysics (Caltech Ge-102)	2017-18
Teaching Assistant	Plate Tectonics (Caltech Ge-161)	2020-21
	Seismology (Caltech Ge-162)	2019-20
	Earth and Environment (Caltech Ge-1)	2018-19

Introduction to Geophysics (Caltech Ge-102)	2017-18
Mechanics (USTC General)	2014-15

EXPERIMENTAL AND FIELD EXPERIENCE

- Multiple deployments and retrievals of nodal seismometers for the San Bernardino Basin experiment, 2018-19

- Operation of Caltech Millikan Library shaker for active source experiment with the Pasadena Distributed Acoustic Sensing Array, 2018

- Multiple deployments and retrievals of nodal seismometers for the San Gabriel Basin experiment, 2017-19

- Active source experiment on San Andreas Fault at the Carrizo Plain, California, 2017

- Seismometer deployment for recording noise in Zhoushan Island, Zhejiang, China, 2014

PROFESSIONAL SERVICE AND OUTREACH

Reviewer	NSF proposals, Science Advances, Nature Communications, EPSL, GRL, JGR: Solid Earth, JGR: Earth Surface, GJI, SRL, BSSA, and many others	2019-
Session Convener	Seismological Society of America Annual Meeting: Session 09	2024
	American Geophysical Union Fall Meeting: Seismology S001	2023
	American Geophysical Union Fall Meeting: Seismology S001	2022
Organizer	Scripps Institution of Oceanography IGPP Seminar Series	2022-23
	IGPP seismology and earthquake geodesy weekly chat	2022-23
	Caltech Seismological Laboratory Seminar Series	2018-19
	Caltech Geology and Planetary Sciences Social Events	2017-18

MEMBERSHIPS

- American Geophysical Union (AGU), 2014-
- Southern California Earthquake Center (SCEC), 2017-
- Seismological Society of America (SSA), 2018-