

Curriculum Vitae of Xin Cui

Ph.D. Candidate in Geophysics

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Research Interests

- Machine Learning in Seismology: ML applications to event clustering and new seismological discoveries.
- Earthquake Physics: Evolution and properties of foreshocks, aftershocks, and mainshocks.
- Earthquake Cycle: Simulation of coseismic and postseismic deformation.

Education

- 2024/9-current, Visiting Student, Université Côte d'Azur, Geoazur Laboratory, Nice, France
Advisor: Prof. Jean-Paul Ampuero
- 2020/9-current, Ph.D. Candidate in Geophysics, USTC, Hefei, China
Advisor: Prof. Zefeng Li
- 2019/6-2019/9, Visiting Student, California Institute of Technology, Pasadena, USA
Advisor: Prof. Robert Clayton
- 2016/9-2020/6, B.S. in Geophysics USTC, Hefei, China
Advisor: Prof. Zefeng Li and Prof. Yan Hu

Awards & Honors

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| 2023 | Outstanding Student Presentation Award, 2023 Annual Meeting of American Geophysical Union (AGU), USA |
| 2023 | Best Student Presentation Award, 2023 Annual Meeting of AI for Seismology Conference, Hefei, China |
| 2023 | Best Poster Award, 2023 Annual Meeting of International Professionals for the Advancement of Chinese Earth Sciences (IPACES), Hefei, China |
| 2023 | National Scholarship Graduate, USTC, China |
| 2022 | National Scholarship Graduate, USTC, China |
| 2020–2023 | Outstanding Student Scholarships, USTC, China (Four times) |
| 2020 | Graduate with honor: USTC, China |

Received Funds

- Youth Student Basic Research Project (PhD Student), National Natural Science Foundation of China, 300,000 Chinese Yuan, PI, 2024/01–2026/12

Publications

*corresponding author

4. Liu, Y. **Cui, X.** Hu, Y.*, Zhang, J. & Chen, Y. (2024). Integrated investigation on heterogeneous lower crust rheology in Kyushu and afterslip behavior following the 2016 Mw7.1 Kumamoto earthquake. *Geophysical Research Letters*, 51, e2023GL107606. doi:[10.1029/2023GL107606](https://doi.org/10.1029/2023GL107606)
3. **Cui, X.** Hu, Y. Ma, S. Li, Z.*, Liu, G. & Huang, H. (2024). Bridging supervised and unsupervised learning to build volcano-seismicity classifiers in Kilauea, Hawaii. *Seismological Research Letters*, 95(3), 1849-1857 doi:[10.1785/0220230251](https://doi.org/10.1785/0220230251)
2. **Cui, X.** Li, Z.* & Hu, Y. (2023). Similar seismic moment release process for shallow and deep earthquakes. *Nature Geoscience*, 16, 454-460 doi:[10.1038/s41561-023-01176-5](https://doi.org/10.1038/s41561-023-01176-5)
1. **Cui, X.** Li, Z.* & Huang, H. (2021). Subdivision of seismicity beneath the summit region of Kilauea volcano: Implications for the preparation process of the 2018 eruption. *Geophysical Research Letters*, 48, e2021GL094698. doi:[10.1029/2021GL094698](https://doi.org/10.1029/2021GL094698)

Ongoing manuscripts:

3. **Cui, X.** Li, Z.*, Han, X. & Yuan, R. (2024). Spurious sound-speed changes on Mars caused by turbulence-induced pressure frequency variations. *Geophysical Research Letters*, under review.
2. **Cui, X.** & Li, Z.*. Moho depth controls earthquake stress drop in Southern California, in preparation.
1. **Cui, X.** & Li, Z.*. Investigating the evolutionary patterns and mechanisms of foreshocks, in preparation.

Meeting Abstracts

5. **Cui, X.** Li, Z. & Ma, S. (2024). Moho depth controls earthquake stress drop in Southern California 2024 IPACES Annual Meeting, Beijing, China.
4. **Cui, X.** & Li, Z. (2023). On the Physical Mechanism of Foreshock Sequences in South California. 2023 AGU Fall Meeting, San Francisco, CA, USA. ID: S31A-05.
3. **Cui, X.** & Li, Z. (2023). Exploring the Predictability of Fault Seismicity with Machine Learning. 2023 IPACES Annual Meeting, Hefei, China.
2. **Cui, X.** & Li, Z. (2021). Are shallow, intermediate-depth, deep-focus EQs distinguishable from source time functions? 2021 Annual Meeting of Asia Oceania Geosciences Society, Online.
1. **Cui, X.** Li, Z. & Huang, H. (2021). Subdivision of seismicity beneath the summit region of Kilauea volcano: Implications for the preparation process of the 2018 eruption. 2021 Annual Meeting of AI for Seismology Conference, Qingdao, China