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**Professional Experience**

- Apr. 2019–present: Assistant Professor (tenure-track), Dalhousie University
- Mar. 2018–Mar. 2019: Postdoctoral Scholar, Stanford University  
Supervisor: William Ellsworth; Topic: Earthquake Seismology
- Mar. 2016–Mar. 2018: Postdoctoral Research Associate, Los Alamos National Laboratory  
Supervisor: Lianjie Huang; Topic: Exploration Seismology
- Jul. 2015–Mar. 2016: Postdoctoral Researcher, Univ. of Sci. and Tech. of China  
Supervisor: Lianxing Wen; Topic: Earthquake Seismology

**Educational Background**

- Ph.D. in Geophysics, 2015, Univ. of Sci. and Tech. of China, Hefei, China  
Thesis: Earthquake Location and Detection; Supervisor: Professor Lianxing Wen
- B.S. in Physics, 2010, Henan Normal University, Xinxiang, China

**Professional Services**

- Primary Convener for Seismology Session, AGU Fall Meeting, 2018, 2022
- Dalhousie Geophysics Monthly Meeting Organizer, since 2020
- Software Development Committee of the National Facility for Seismic Imaging, Since 2020
- Editorial Board, Earthquake Science, Since 2022
- Guest Associate Editor, Research Topic "Applications of Machine Learning in Seismology", Frontiers in Earth Science, 2022
- Peer Reviewer for Journals: *Communications Earth & Environment*, *Scientific Reports*, *Geophysical Research Letters*, *Journal of Geophysical Research*, *Geophysical Journal International*, *Seismological Research Letters*, *Bulletin of the Seismological Society of America*, *Tectonophysics*, *Pure and Applied Geophysics*, *Interpretation*, *The Seismic Record*, *Acta Geophysica*

**Scientific Publications** (Peer-reviewed Journal Papers; \*corresponding author, #supervised or co-supervised students)

1. Zhang XT.#, Reichard-Flynn W.#, Zhang M., Hirn M. and Lin YZ. Spatio-Temporal Graph Convolutional Networks for Earthquake Source Characterization, *Journal of Geophysical Research-Solid Earth*, 2022, <https://doi.org/10.1029/2022JB024401>
2. Liu M.#\*, Zhang M. and Li H. Using the match-and-locate method to characterize the foreshocks of the July 2019 Mw 6.4 Ridgecrest, CA earthquake, *Earthquake Science*, 2022, <https://doi.org/10.1016/j.eqs.2022.08.005>, as cover figure of the issue
3. Liu M.#, Li H., **Zhang M.**, Wang W., Yang Y., Chang Z. and Zhang H. Investigation of the 2013 Eryuan, Yunnan, China MS 5.5 Earthquake Sequence: Aftershock Migration, Seismogenic Structure and Hazard Implication, *Tectonophysics*, 2022, <https://doi.org/10.1016/j.tecto.2022.229445>

4. Feng T.<sup>#</sup>, **Zhang M.\***, Xu L., Wu J. and Fang L. Machine-Learning-Based Earthquake Catalog and Tomography Characterize the Middle-Northern Section of the Xiaojiang Fault Zone, *Seismological Research Letters*, 2022, <https://doi.org/10.1785/0220220116>
5. Liu M.<sup>#</sup>, Li H., Li L., **Zhang M.** and Wang W. Multistage Nucleation of the 2021 Yangbi MS 6.4 Earthquake and Its Foreshocks, *Journal of Geophysical Research: Solid Earth*, 2022, <https://doi.org/10.1029/2022JB024091>
6. **Zhang M.\***, Liu M., Feng T., Wang R. and Zhu W. LOC-FLOW: An End-to-End Machine-Learning-Based High-Precision Earthquake Location Workflow, *Seismological Research Letters*, 2022, <https://doi.org/10.1785/0220220019>
7. Glasgow M.E., Schmandt B., Wang R., **Zhang M.**, Bilek S.L. and Kiser E. Raton Basin induced seismicity is hosted by networks of short basement faults and mimics tectonic earthquake statistics, *Journal of Geophysical Research: Solid Earth*, 2021, <https://doi.org/10.1029/2021JB022839>
8. Huang Y., **Zhang M.**, Gao K., Sabin A. and Huang L. Imaging Complex Subsurface Structures for Geothermal Exploration at Eleven-Mile Canyon in Nevada, *Frontiers in Earth Science*, 2021, <https://doi.org/10.3389/feart.2021.782901>
9. Zhou L., Zhao C., **Zhang M.**, Xu L., Cui R., Zhao C., Duan M. and Luo J. Machine-learning-based earthquake locations reveal the seismogenesis of the 2020 MW 5.0 Qiaojia, Yunnan earthquake, *Geophysical Journal International*, 2021, <https://doi.org/10.1093/gji/ggab420>
10. Su JB, Liu M.<sup>#</sup>, Zhang YP., Wang WT., Li HY., Yang J., Li XB. and **Zhang M.** High resolution earthquake catalog building for the 21 May 2021 Yangbi, Yunnan, Ms 6.4 earthquake sequence using deep-learning phase picker, *Chinese Journal of Geophysics*, 2021, <https://doi.org/10.6038/cjg2021O0530>
11. Tan Y.J., Waldhauser F., Ellsworth W.L., **Zhang M.**, Zhu W., Michele M., Chiaraluca L., Beroza G.C. and Segou M. Machine-learning-based high-resolution earthquake catalog reveals how complex fault structures were activated during the 2016-2017 central Italy sequence, *The Seismic Record*, 2021, <https://doi.org/10.1785/0320210001>
12. **Zhang M.\***, Liu M.<sup>#</sup>, Plourde A., Bao F., Wang RJ. and Gosse J. Source characterization for two small earthquakes in Dartmouth, Nova Scotia, Canada: pushing the limit of single station. *Seismological Research Letters*, <https://doi.org/10.1785/0220200297>
13. Zhang X., **Zhang M.\*** and Tian X. Real-time Earthquake Early Warning with Deep Learning: Application to the 2016 M 6.0 Central Apennines, Italy Earthquake. *Geophysical Research Letters*, 2021, <https://doi.org/10.1029/2020GL089394>
14. Zhao M., Tang L., Chen S., Su J. and **Zhang M.** Machine learning based automatic foreshock catalog building for the 2019 Ms 6.0 Changning, Sichuan earthquake. *Chinese Journal of Geophysics*, 2021, <https://doi.org/10.6038/cjg2021O0271>
15. Grigoli F., Ellsworth W., **Zhang M.**, Mousavi M., Cesca S., Satriano C., Beroza G. and Wiemer S. Relative earthquake location procedure for clustered seismicity with a single station. *Geophysical Journal International*, 2021, <https://doi.org/10.1093/gji/ggaa607>

16. Wang JC., Li TY., Gu YJ., Schultz R., Yusifbayov J. and **Zhang M.** Sequential Fault Reactivation and Secondary Triggering in the March 2019 Red Deer Induced Earthquake Swarm. *Geophysical Research Letters*, 2020, <https://doi.org/10.1029/2020GL090219>.
17. Wang RJ., Schmandt B., **Zhang M.**, Glasgow M., Kiser E., Rysanek S. and Stairs R. Injection-induced earthquakes on complex fault zones of the Raton Basin illuminated by machine-learning phase picker and dense nodal array. *Geophysical Research Letters*, 47(14): e2020GL088168, 2020, <https://doi.org/10.1029/2020GL088168>
18. Mon C.T., Gong X., Wen Y., Jiang M., Chen Q., **Zhang M.**, Hou G., Thant M., Sein K. and He Y. Insight into major active faults in Central Myanmar and the related geodynamic sources. *Geophysical Research Letters*, 47(8): e2019GL086236, 2020, <https://doi.org/10.1029/2019GL086236>
19. Liu M.#, **Zhang M.\***, Zhu W., Ellsworth W. and Li H. Rapid Characterization of the July 2019 Ridgecrest, California Earthquake Sequence from Raw Seismic Data using Machine Learning Phase Picker. *Geophysical Research Letters*, 47(4), e2019GL086189, 2020, <https://doi.org/10.1029/2019GL086189>
20. Liu M.#, Li H., **Zhang M.** and Wang T. Graphics Processing Unit-based Match and Locate (GPU-M&L): an improved Match and Locate method and its application. *Seismological Research Letters*, 91(2A), 1019-1029, 2020, <https://doi.org/10.1785/0220190241>
21. Tang L., **Zhang M.** and Wen L. Support Vector Machine Classification of Seismic Events in Tianshan Orogenic Belt. *Journal of Geophysical Research: Solid Earth*, 125(1), e2019JB018132, 2020, <https://doi.org/10.1029/2019JB018132>
22. **Zhang M.\***, Ellsworth W. and Beroza G. Rapid Earthquake Association and Location. *Seismological Research Letters*, 90(6): 2276-2284, 2019, <https://doi.org/10.1785/0220190052>
23. Wang K., Ellsworth W., Beroza G., Williams G., **Zhang M.**, Schroeder D. and Rubinstein J. Seismology with Dark Data: Image-Based Processing of Analog Records Using Machine Learning for the Rangely Earthquake Control Experiment. *Seismological Research Letters*, 90 (2A): 553-562, 2019, <https://doi.org/10.1785/0220180298>

#### Before 2019

24. Tang L., Lu Z., **Zhang M.**, Sun L. and Wen L. Seismicity induced by simultaneous abrupt changes of injection rate and well pressure in Hutubi Gas Field. *Journal of Geophysical Research: Solid Earth*, 123 (7): 5929-5944, 2018, <https://doi.org/10.1029/2018JB015863>
25. Wang R., Gu YJ., Schultz R., **Zhang M.** and Kim A. Source Characteristics and Geological Implications of the January 2016 Induced Earthquake Swarm near Crooked Lake, Alberta. *Geophysical Journal International*, 210 (2), 979-988, 2017, <https://doi.org/10.1093/gji/ggx204>
26. Sun L., **Zhang M.** and Wen L. A new method for high-resolution event relocation and application to the aftershocks of Lushan Earthquake, China. *Journal of Geophysical Research: Solid Earth*, 121 (4), 2539-2559, 2016, <https://doi.org/10.1002/2016JB012840>
27. **Zhang M.\*** and Wen L. Earthquake characteristics before eruptions of Japan's Ontake volcano in 2007 and 2014. *Geophysical Research Letters*, 42 (17), 6982-6988, 2015, <https://doi.org/10.1002/2015GL065165>

28. **Zhang M.\*** and Wen L. Seismological Evidence for a Low-Yield Nuclear Test on 12 May 2010 in North Korea. *Seismological Research Letters*, 86 (1), 138-145, 2015, <https://doi.org/10.1785/02201401170>
29. **Zhang M.\*** and Wen L. An effective method for small event detection: match and locate (M&L). *Geophysical Journal International*, 200 (3), 1523-1537, 2015, <https://doi.org/10.1093/gji/ggu466>
30. **Zhang M.\***, Tian D. and Wen L. A new method for earthquake depth determination: stacking multiple-station autocorrelograms. *Geophysical Journal International*, 197 (2), 1107-1116, 2014, <https://doi.org/10.1093/gji/ggu044>
31. **Zhang M.\*** and Wen L. High-precision location and yield of North Korea's 2013 nuclear test. *Geophysical Research Letters*, 40 (12), 2941-2946, 2013, <https://doi.org/10.1002/grl.50607>