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Associate Professor

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Education

2012–2018	Ph.D in Geophysics, University of Science and Technology of China, Hefei, China
2008–2012	B.S. in Geophysics, University of Science and Technology of China, Hefei, China

Employment

2021/11–present	Associate Professor, China University of Geosciences, Wuhan, China
2018/08–2021/09	Postdoctoral Research Associate, Michigan State University, East Lansing, USA

Research Interests

- Structure of the Earth's Deep Interior
- Theory and Observations of Earthquake Source
- Theory of Wave Propagation

Professional Societies & Activities

- Member of the American Geophysical Union (since 2012), the Chinese Geophysical Society (since 2022)
- Peer-reviewer of scientific journals: *Geophysical Research Letters*, *Seismological Research Letters*, *Review of Scientific Instruments*, *Journal of Open Source Software*, *Results in Geophysical Sciences*
- Founder of the SeisMan blog (2013), GMT China Community (2016) and seismo-learn (2020)
- Core developer of the Generic Mapping Tools (GMT) and PyGMT (since 2018)
- Research assistant and database manager for China Seismological Reference Model (2016–2018)
- Judge for the Outstanding Student Paper Award, AGU Fall Meeting (2018–2020)

Awards & Honors

2021	One Hundred Talents Program, China University of Geosciences, China
2018	President Award, Chinese Academy of Sciences, China
2018	Outstanding Graduate Student, University of Science and Technology of China, China

2017 Outstanding Student Paper Award, 2017 Annual Meeting of Chinese Geoscience Union, China

2017 National Scholarship for Doctoral Students, Ministry of Education, China

2014 Kwang-Hua Scholarship, Kwang-Hua Education Foundation, China

2010 Kwang-Hua Scholarship, Kwang-Hua Education Foundation, China

2009 Excellent Volunteer, University of Science and Technology of China, China

Received Funds

- Startup, One Hundred Talents Program, China University of Geosciences, ¥ 2,000k (2021–2026)

Peer-reviewed Publications

*corresponding author, #co-first author.

13. Yao, J., **Tian, D.**, Sun, L., & Wen, L. (2021). Comment on "Origin of temporal changes of inner-core seismic waves" by Yang and Song (2020). *Earth and Planetary Science Letters*, *553*, 116640. doi:10.1016/j.epsl.2020.116640

12. Wei, S. S., Shearer, P. M., Lithgow-Bertelloni, C., Stixrude, L., & **Tian, D.** (2020). Oceanic plateau of the Hawaiian mantle plume head subducted to the uppermost lower mantle. *Science*, *370*, 983–987. doi:10.1126/science.abd0312

11. **Tian, D.***, Lv, M., Wei, S. S., Dorfman, S. M., & Shearer, P. M. (2020). Global variations of Earth's 520- and 560-km discontinuities. *Earth and Planetary Science Letters*, *552*, 116600. doi:10.1016/j.epsl.2020.116600

10. Wessel, P., Luis, J., Uieda, L., Scharroo, R., Wobbe, F., Smith, W. H. F., & **Tian, D.** (2019). The Generic Mapping Tools Version 6. *Geochemistry, Geophysics, Geosystems*, *20*(11), 5556–5564. doi:10.1029/2019GC008515

9. Yao, J., **Tian, D.**, Sun, L., & Wen, L. (2019). Temporal change of seismic Earth's inner core phases: inner core differential rotation or temporal change of inner core surface? *Journal of Geophysical Research: Solid Earth*, *124*(7), 6720–6736. doi:10.1029/2019JB017532

8. Fan, W., Wei, S. S., **Tian, D.**, McGuire, J. J., & Wiens, D. A. (2019). Complex and diverse rupture processes of the 2018 Mw 8.2 and Mw 7.9 Tonga-Fiji deep earthquakes. *Geophysical Research Letters*, *46*(5), 2434–2448. doi:10.1029/2018GL080997

7. Yao, J., **Tian, D.**#, Lu, Z., Sun, L., & Wen, L. (2018). Triggered seismicity after North Korea's 3 September 2017 nuclear test. *Seismological Research Letters*, *89*(6), 2085–2093. doi:10.1785/0220180135

6. Yao, J., **Tian, D.**#, Sun, L., & Wen, L. (2018). Source characteristics of North Korea's 3 September 2017 nuclear test. *Seismological Research Letters*, *89*(6), 2078–2084. doi:10.1785/0220180134

5. **Tian, D.***, Yao, J., & Wen, L. (2018). Collapse and earthquake swarm after North Korea's 3 September 2017 nuclear test. *Geophysical Research Letters*, *45*(9), 3976–3983. doi:10.1029/2018GL077649

4. Wen, L., **Tian, D.**, & Yao, J. (2018). Seismic structure and dynamic process of the Earth's inner core and its boundary. *Chinese Journal of Geophysics*, *61*(3), 803–818. doi:10.6038/cjg2018L0500 [in Chinese]

3. **Tian, D.**, & Wen, L. (2017). Seismological evidence for a localized mushy zone at the Earth's inner core boundary. *Nature communications*, 8, 165. doi:10.1038/s41467-017-00229-9

2. Chen, X., **Tian, D.**, & Wen, L. (2015). Microseismic sources during hurricane sandy. *Journal of Geophysical Research: Solid Earth*, *120*(9), 6386–6403. doi:10.1002/2015JB012282

1. Zhang, M., **Tian, D.**, & Wen, L. (2014). A new method for earthquake depth determination: stacking multiple-station autocorrelograms. *Geophysical Journal International*, *197*(2), 1107–1116. doi:10.1093/gji/ggu044

Meeting Abstracts

26. Zhang, Y., Byrnes, J. S., Wei, S. S., **Tian, D.**, Wang, F., & Bezada M. (2021). P-wave attenuation tomography of the Tonga-Lau mantle wedge improved by a Bayesian Monte Carlo approach and independently constrained source spectra. Abstract S25D-0276 virtually presented at 2021 AGU Fall Meeting.

25. Meghan, J., Grund, M., Schlitzer, W., Leong, W. J., **Tian, D.**, Yao, J., & Uieda, L. (2021). PyGMT: An open-source Python library for geospatial processing, analysis, and visualization. Abstract IN55C-08 virtually presented at 2021 AGU Fall Meeting.

24. Wei, S. S., Zhang, Y., **Tian, D.**, & Wiens, D. A. (2021). New advances in body-wave attenuation studies of the Tonga subduction zone. Abstract S23B-05 virtually presented at 2021 AGU Fall Meeting.

23. **Tian, D.**, & Wei, S. S. (2021). Source spectra and stress drops of small-to-moderate earthquakes beneath the Alaska peninsula. Abstract T54A-11 virtually presented at 2021 AGU Fall Meeting.

22. Wei, S. S., Shearer, P. M., Lithgow-Bertelloni, C., Stixrude, L., & **Tian, D.** (2021). Oceanic plateau of the Hawaiian mantle plume head subducted to the uppermost lower mantle. Abstract EGU21-13874 virtually presented at EGU General Assembly 2021.

21. **Tian, D.**, Wang, W., Wang, F., & Wei, S. S. (2020). Source spectra of intermediate-depth and deep earthquakes in the Tonga subduction zone. Abstract S054-0012 virtually presented at 2020 AGU Fall Meeting.

20. Wei, S. S., **Tian, D.**, Shearer, P. M., Lv, M., Dorfman, S. M., Lithgow-Bertelloni, C., & Stixrude, L. (2020). Compositional heterogeneities in the mid-mantle revealed by seismic discontinuities and reflectors. Abstract DI016-0008 virtuablly presented at 2020 AGU Fall Meeting.

19. **Tian, D.**, Wang, W., & Wei, S. S. (2019). Source spectra and stress drop of deep earthquakes in the Tonga subduction zone. Abstract S13C-0458 presented at 2019 AGU Fall Meeting, San Francisco, CA, USA.

18. **Tian, D.**, Wei, S. S., & Shearer, P. M. (2019). Global variations of the 520-km discontinuity. Presented at Gordon Research Conference: Interior of the Earth, South Hadley, MA, USA.

17. **Tian, D.**, Wei, S. S., & Shearer, P. M. (2018). Global variations of the 520-km discontinuity. Abstract DI31C-0024 presented at 2018 AGU Fall Meeting, Washington, DC, USA.

16. **Tian, D.**, Yao, J., & Wen, L. (2017). Collapse and earthquake swarm after North Korea's 3 September 2017 nuclear test. Abstract S43H-2968 presented at 2017 AGU Fall Meeting, New Orleans, LA, USA.
15. **Tian, D.**, & Wen, L. (2017). Three types of Earth's inner core boundary. Abstract DI33B-0404 presented at 2017 AGU Fall Meeting, New Orleans, LA, USA.
14. Yao, J., **Tian, D.**, & Wen, L. (2017). High-precision location, yield and tectonic release of North Korea's 3 September 2017 nuclear test. Abstract S43H-2967 presented at 2017 AGU Fall Meeting, New Orleans, LA, USA.
13. Yao, J., **Tian, D.**, Sun, L., & Wen, L. (2017). Temporal change of seismic Earth's inner core phases: Inner core differential rotation or temporal change of inner core surface? Abstract DI33B-0405 presented at 2017 AGU Fall Meeting, New Orleans, LA, USA.
12. **Tian, D.**, & Wen, L. (2017). Seismological evidence for a localized mushy zone at the Earth's inner core boundary. Presented at Gordon Research Conference: Interior of the Earth, South Hadley, MA, USA.
11. Yao, J., **Tian, D.**, Sun, L., & Wen, L. (2017). Temporal change of seismic Earth's inner core phases: Inner core differential rotation or temporal change of inner core surface? Presented at Gordon Research Conference: Interior of the Earth, South Hadley, MA, USA.
10. **Tian, D.**, & Wen, L. (2017). Seismological evidence for a localized mushy zone at the Earth's inner core boundary. Presented at 2017 Annual Meeting of Chinese Geoscience Union, Beijing, China.
9. **Tian, D.**, & Wen, L. (2016). Seismic structures of the Earth's inner core boundary beneath the Bearing sea and Mexico. Abstract DI43A-2657 presented at 2016 AGU Fall Meeting, San Francisco, CA, USA.
8. **Tian, D.**, & Wen, L. (2015). Varying seismic property of the Earth's inner core boundary. Abstract DI33A-2606 presented at 2015 AGU Fall Meeting, San Francisco, CA, USA.
7. **Tian, D.**, & Wen, L. (2014). Seismic study on the properties of the Earth's inner core boundary. Abstract DI31B-4269 presented at 2014 AGU Fall Meeting, San Francisco, CA, USA.
6. **Tian, D.**, & Wen, L.(2014). Topography and properties of the Earth's inner core boundary。Abstract presented at 2014 Annual Meeting of Chinese Geophysical Society, Beijing, China.,
5. Chen, X., **Tian, D.**, & Wen, L. (2013). Seismic tracking of hurricane sandy. Abstract S11A-2296 presented at 2013 AGU Fall Meeting, San Francisco, CA, USA.
4. **Tian, D.**, & Wen, L. (2013). Regional topography variation of Earth's inner core boundary. Abstract DI23A-2282 presented at 2013 AGU Fall Meeting, San Francisco, CA, USA.
3. Zhang, M., **Tian, D.**, & Wen, L. (2013). A new method for earthquake determination: stacking multiple-station autocorrelograms. Abstract S51A-2301 presented at 2013 AGU Fall Meeting, San Francisco, CA, USA.
2. **Tian, D.**, & Wen, L. (2013). Simulating wave propagation in a faulted medium using a finite difference method. Abstract presented at 2013 Annual Meeting of Chinese Geophysical Society, Kunming, Yunnan, China.

1. **Tian, D.**, & Wen, L. (2012). Simulating wave propagation in a faulted medium using a 3D finite difference method. Abstract S43A-2458 presented at 2012 AGU Fall Meeting, San Francisco, CA, USA.

Talks

8. Tectonics & Geophysics Young Scholars Research Symposium. Nanjing University. 2021/01/07.
7. Department of Earth and Space Sciences, Southern University of Science and Technology. 2020/11/27. [**Invited**].
6. 2nd Annual Earth and Environmental Sciences Student Research Symposium. Department of Earth and Environmental Sciences, Michigan State University. 2019/02/23.
5. Institute of Geology and Geophysics, Chinese Academy of Sciences. 2018/06/15. [**Invited**]
4. Institute of Earthquake Forcasting, China Earthquake Administration. 2018/06/14.
3. 2017 Annual Meeting of Chinese Geoscience Union (CGU). 2017/10/17. [**Invited**]
2. Workshop on Analysis and Applications of Crustal Deformation Data. Hubei Earthquake Administration. 2016/09/21. [**Invited**]
1. China Earthquake Networks Center. 2016/06/30. [**Invited**]

Teaching Experience

Workshops

- Instructor, the UNAVCO Short Course "The Generic Mapping Tools for Geodesy" (2019–2021)
- Instructor, Workshop SCIWS4: "Become a Generic Mapping Tools Contributor Even If You Can't Code", 2019 AGU Fall Meeting (2019)

Students Supervised

Undergraduate Students

- Yangqi Song, China University of Geosciences, 2022

Field Experience

- **LEEP** (**L**ake **E**rie **E**arthquake ex**P**eriment), 2018/10/12–2018/10/16, install 8 broadband seismic stations around Lake Erie

Open Source Software

Year indicates when the project was started. All projects are currently ongoing.

2014 **HinetPy** – A python package to request and process seismic waveform data from Hi-net. `https://github.com/seisman/HinetPy/`