

# 田冬冬

## 博士后

密西根州立大学，地球和环境科学系

邮箱: [tiandong@msu.edu](mailto:tiandong@msu.edu) | 主页: <https://me.seisman.info>

## 教育经历

- 2018 地球物理博士学位，中国科学技术大学，中国安徽省合肥市
- 2012 地球物理学学士学位，中国科学技术大学，中国安徽省合肥市

## 工作经历

08/2018 – present 博士后，密西根州立大学，美国密西根州东兰辛

## 研究方向及兴趣

- 地球深部结构
- 小震机制（微震、核试验、塌陷等）
- 复杂介质中地震波传播的数值模拟

## 荣誉

- 2018 中国科学院院长奖
- 2018 中国科学技术大学优秀毕业生
- 2017 中国地球科学联合学术年会优秀学生论文奖
- 2017 博士生国家奖学金
- 2014 光华奖学金
- 2010 光华奖学金
- 2009 中国科学技术大学优秀志愿者

## 学术活动

- 2012 – present 美国地球物理联合会 (AGU) 会员
- 2013 – present [SeisMan](#) 博客博主
- 2016 – 2018 [中国地震学参考模型](#) 研究助理及数据库管理员
- 2016 – present [GMT 中文社区](#) 创办者
- 2017 – present 期刊审稿人: *Geophysical Research Letters* (1), *Seismological Research Letters* (2), *Review of Scientific Instruments* (1), *Journal of Open Source Software* (2), *Results in Geophysical Sciences* (1)
- 2018 – present [Generic Mapping Tools \(GMT\)](#) 和 [PyGMT](#) 核心开发者
- 2018 – 2019 AGU 秋季会议 Outstanding Student Paper Award 评审
- 2019 – 2020 UNAVCO 短期课程 “The Generic Mapping Tools for Geodesy” 指导讲师
- 2019 AGU 秋季会议研讨会 SCIWS4: “[Become a Generic Mapping Tools Contributor Even If You Can’t Code](#)” 指导讲师

## 已发表论文

\* 通讯作者, # 共同一作

13. 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*, doi:[10.1126/science.abd0312](https://doi.org/10.1126/science.abd0312)
12. Yao, J., **Tian, D.**, Sun, L., & Wen, L. (2020). Comment on “Origin of temporal changes of inner-core seismic waves” by Yang and Song (2020). *Earth and Planetary Science Letters*, doi:[10.1016/j.epsl.2020.116640](https://doi.org/10.1016/j.epsl.2020.116640)
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, doi:[10.1016/j.epsl.2020.116600](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/10.1029/2018GL080997)
7. Yao, J., **Tian, D.**<sup>#</sup>, 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](https://doi.org/10.1785/0220180135)
6. Yao, J., **Tian, D.**<sup>#</sup>, 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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/10.1093/gji/ggu044)

## 会议摘要

18. **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.
17. Wei, S. S., **Tian, D.**, Shearer, P. M., Lv, M., Dorfman S. M., Lithgow-Bertelloni, C. R., & Stixrude, L. P. Compositional heterogeneities in the mid-mantle revealed by seismic discontinuities and reflectors. Abstract DI016-0008 virtually presented at 2020 AGU Fall Meeting.
16. **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.
15. **Tian, D.**, Wei, S. S., & Shearer, M. P. (2019) Global variations of the 520-km discontinuity. Presented at Gordon Research Conference: Interior of the Earth, South Hadley, MA, USA.
14. **Tian, D.**, Wei, S. S., & Shearer, M. P. (2018) Global variations of the 520-km discontinuity. Abstract DI31C-0024 presented at 2018 AGU Fall Meeting, Washington, DC, USA.

13. **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.
12. **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.
11. 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.
10. 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.
9. **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.
8. 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.
7. **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.
6. **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.
5. **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.
4. 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.
3. **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.
2. 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.
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.

## 学术报告

8. Global variations of Earth's 520- and 560-km discontinuities, Department of Earth and Space Sciences, Southern University of Science and Technology, Nov. 27, 2020. [邀请报告].
7. Global variations of the 520-km discontinuity. *2nd Annual Earth and Environmental Sciences Student Research Symposium*, Department of Earth and Environmental Sciences, Michigan State University, East Lansing, MI, USA. Feb. 23, 2019.
6. Collapse and earthquake swarm after North Korea's 2017 nuclear test. *Institute of Geology and Geophysics, Chinese Academy of Sciences*, Beijing, China. Jun. 15, 2018.
5. Seismological evidence for a localized mushy zone at the Earth's inner core boundary. *Institute of Geology and Geophysics, Chinese Academy of Sciences*, Beijing, China. Jun. 15, 2018. [邀请报告]
4. Fine-scale structure of the Earth's inner core boundary and aftershocks of North Korea's 2017 nuclear test. *Institute of Earthquake Forecasting, China Earthquake Administration*, Beijing, China. Jun. 14, 2018.
3. Seismological evidence for a localized mushy zone at the Earth's inner core boundary. *2017 Annual Meeting of Chinese Geoscience Union (CGU)*, Beijing, China. Oct. 17, 2017. [邀请报告]
2. Getting started with GMT in 60 minutes. *Workshop on Analysis and Applications of Crustal Deformation Data*, Wuhan, China. Sep. 21, 2016. [邀请报告]
1. Seismic study on the properties of the Earth's inner core boundary. *China Earthquake Networks Center*, Beijing, China. Jun. 30, 2016. [邀请报告]

## 野外经历

- LEEP (Lake Erie Earthquake exPeriment), 10/12/2018 – 10/16/2018, 在 Erie 湖周边安装 8 个宽频带地震仪

## 开源软件

\* 年份表示项目开始时间。所有软件目前仍在维护中。

2014 **HinetPy** – 用于从 Hi-net 网站申请和处理地震波形数据的 Python 软件包  
<https://github.com/seisman/HinetPy/>