

# Zelong Guo

📍 GFZ German Research Centre for Geosciences, Potsdam, Germany    ✉ zelong.guo@gfz-potsdam.de  
✉ zelong.guo@outlook.com    🔗 <https://zelongguo.github.io/>    🌐 Zelong Guo

## Basic Information

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- Date of Birth: 28.09.1993
- Place of Birth: Jinan City, Shandong Province, China

More information and news could be found at my [Personal webpage](#) 🔗 and [Github page](#). 🔗

## Research Interest

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- Earthquake cycle deformation modeling (For the PhD, I mainly focus on postseismic modeling with InSAR)
- Geodetic techniques (InSAR and GNSS)

## Education

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### GFZ German Research Centre for Geosciences

*PhD in Geodesy/Geophysics* (also at **Leibniz University Hannover, IPI**)

*Potsdam, DE*

*Oct. 2020 – present*

- **Institute:** Section 1.4 Remote Sensing and Geoinformatics
- **Advisor:** Prof. [Mahdi Motagh](#) 🔗
- **Coursework:** Remote Sensing, Positioning and Navigation, Image Analysis, GIS

### Wuhan University

*Master in Geophysics*

*Wuhan, CN*

*Sep. 2017 – Jul.2020*

- **Institute:** School of Geodesy and Geomatics
- **Advisor:** Prof. [Yangmao Wen](#) 🔗
- **Coursework:** Geophysical Inversion Theory, Geophysics and Geodesy, Advanced Seismology

### Shandong University of Science and Technology

*Bachelor in Geodesy*

*Qingdao, CN*

*Sep. 2012 – Jul.2016*

- **Institute:** School of Geomatics
- **Coursework:** Geodesy, Adjustment, GPS, Remote Sensing

## Code Packages

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### InSAR and Earthquake Modeling:

- **S1\_TS\_proc:**  
Some *Shell* scripts based on GAMMA software for automatic batch processing InSAR data, now only Sentinel-1 data supported.
- **Dislocation:**  
A *Python C Extension* for calculating deformation, stress and strain with rectangular and triangular dislocations [still under developing...]
- **Seislip:**  
*Python* codes for co- and post-seismic modeling [under developing ...]

Other **productivity tools** like **Nvim** etc please find them at my [Github page](#). 🔗

## Publications

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### Publications as First or Corresponding Authors:

1. **Guo, Z.**, M. Base, and M. Motagh (2024). Ramp-Flat and Splay Faulting Illuminated by Frictional Afterslip Following the 2017 Mw 7.3 Sarpol-e Zahab Earthquake, *Seismological Research Letter*, 1-14, [doi:10.1785/0220230425](https://doi.org/10.1785/0220230425) 🔗

2. **Guo, Z.**, Motagh, M., Hu, J.-C., Xu, G., Haghighi, M. H., Bahroudi, A., et al. (2022). Depth-varying Friction on a Ramp-flat Fault Illuminated by ~3-year InSAR Observations Following the 2017 Mw 7.3 Sarpol-e Zahab earthquake. *Journal of Geophysical Research: Solid Earth*, 127, doi: 10.1029/2022JB025148 [🔗](#)
3. **Guo, Z.**, Wen, Y., Xu, G., Wang, S., Wang, X., Liu, Y., and Xu, C. (2019). Fault Slip Model of the 2018 Mw 6.6 Hokkaido Eastern Iburu, Japan, Earthquake Estimated from Satellite Radar and GPS Measurements. *Remote Sensing*, 11(14), doi:10.3390/rs11141667 [🔗](#).
4. Wen, Y., **Guo, Z.**, Xu, C., Xu, G., and Song, C. (2019). Coseismic and Postseismic Deformation Associated with the 2018 Mw 7.9 Kodiak, Alaska, Earthquake from Low-Rate and High-Rate GPS Observations. *Bulletin of the Seismological Society of America*, 109(3), 908–918, doi:10.1785/0120180246 [🔗](#).

#### Publications as Co-Authors:

1. Peng, M., Motagh, M., Lu, Z., Xia, Z., **Guo, Z.**, Zhao, C. and Liu, Q. (2023). Characterization and prediction of InSAR-derived ground motion with ICA-assisted LSTM model. *Remote Sensing of Environment*, 301,113923, doi:10.1016/j.rse.2023.113923 [🔗](#)
2. Xu, G., Wen, Y., Yi, Y., **Guo, Z.**, Wang, L., and Xu, C. (2023). Geodetic constraints of the 2015 Mw6.5 Alor, East Indonesia earthquake: a strike-slip faulting in the convergent boundary. *Geophysical Journal International*, 235(1), doi:10.1093/gji/ggad211 [🔗](#)
3. Zhang, Y., Xu, C., Fang, J. and **Guo, Z.** (2021). Focal mechanism inversion of the 2018 Mw7.1 Anchorage earthquake based on high-rate GPS observation. *Geodesy and Geodynamics*, 12(6), 381-391, doi:10.1016/j.geog.2021.09.004 [🔗](#)

#### Conferences and Presentations

1. **Guo, Z.**, Motagh, M., Baes, M. Structural Complexity Revealed by Frictional Afterslip Models and InSAR Observations Following the 2017 Mw 7.3 Sarpol-e Zahab (Iran-Iraq) Earthquake: Insights from Numerical Modeling, *EGU General Assembly 2024*, Vienna, Austria, 2024
2. **Guo, Z.**, Motagh, M. Fault Geometry and Frictional Afterslip Following the 2017 Mw 7.3 Sarpol-e Zahab (Iran-Iraq) Earthquake: Insights from InSAR and Finite Element Models, *20th Wegener Assembly 2023*, Sousse, Tunisia, 2023
3. **Guo, Z.**, Motagh, M. Frictional Afterslip Modeling of the 2017 Mw 7.3 Sarpol-e Zahab Earthquake Using InSAR Observations and 2-D Finite Element Method, *Fringe 2023*, Leeds University, Leeds, UK, 2023.
4. **Guo, Z.**, Motagh, M., Hu, J.-C., Xu, G., Haghighi, M. H., Bahroudi, A. and Fathian, A. (2022). Transient aseismic slip and crustal Shortening Following 2017 Iran-Iraq (Sarpol-e Zahab) Mw 7.3 Earthquake Inferred from 3 years of InSAR Observations, *EGU General Assembly 2022*, Vienna, Austria, 2022.
5. **Guo, Z.**, Wen, Y.; Xu, C. and Xu, G. Modeling of Coseismic and Early Postseismic Deformation Associated with the 2018 Mw 7.9 Kodiak, Alaska Earthquake from Static and High-rate GPS Observations (in Chinese), *3rd Congress of China Geodesy and Geophysics*, China, 2018
6. **Guo, Z.**, Wen, Y.; Xu, G.; Wang S.; and Xu, G.; Wang, X.; Liu, Y.; Xu, C. Slip Distribution of the 2018 Mw 6.6 Hokkaido Eastern Iburu, Japan, Earthquake from InSAR and GPS data (in Chinese), *6th Annual Meeting of Chinese Geoscience Union (CGU)*, China, 2019

#### Scholarship and Awards

##### Scholarship:

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|---|-------------|
| ○ CSC (China Scholarship Council) Scholarship, China                                    | 2020 - 2024 |
| ○ National Scholarship (20,000 RMB), Wuhan University, China                            | Oct. 2019   |
| ○ Academic Scholarship (First Class), School of Geodesy and Geomatics, Wuhan University | Oct. 2019   |
| ○ Academic Scholarship, School of Geodesy and Geomatics, Wuhan University               | Sep. 2018   |
| ○ Academic Scholarship, School of Geodesy and Geomatics, Wuhan University               | Sep. 2017   |
| ○ Jianyuan Scholarship, Shandong University of Science and Technology                   | Dec. 2014   |

- School-Level Scholarship, Shandong University of Science and Technology

*2012 - 2016*

**Awards:**

- Outstanding Student Paper Award, 6th Annual Meeting of Chinese Geoscience Union, (CGU)
- Excellent Graduate Student, Wuhan University
- Lequn Academic Star, School of Geodesy and Geomatics, Wuhan University
- Silver medalist for Surveying and Mapping Skills Contest of Shandong
- Bronze medalist for Surveying and Mapping Skills Contest of Shandong University of Science and Technology

*Dec. 2019*

*Nov. 2019*

*Oct. 2019*

*Oct. 2014*

*May. 2014*