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| **Zechao Zhuo** | |
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| **EDUCATION** | |
| **University of Science and Technology of China** | Hefei, CHN |
| *Bachelor of Science*, Major: Geophysics | *09/2016 – 07/2020* |
| * Core courses: *Mechanics* (97/100), *Introduction to Earth Sciences II* (91/100), *Foundation of Continuous Media Mechanics*, *Spectrum Analysis and Digits Signal Processing*, *Principles and Application of Seismology* (92/100), *Physical Geology*, *The Gravity and the Tide of the Earth*, *Regional Tectonics of China* (96/100) *Undergraduate research program* (A+) | |
| * Award: Excellent Student Scholarship, Bronze (2019) | |
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| **RESEARCH EXPERIENCE** | |
| **Geodynamics Research Center, USTC** | Hefei, CHN |
| Advisor: Dr. Yan Hu | |
| * **The Effect of Map Projection on Coseismic Displacement Calculation (paper in preparation)** | *09/2019 – present* |
| * Found the projection issue as a by-product of summer research at MSU (inspired by Prof. Freymueller) by comparing the five different software programs for earthquake displace calculation * Learned how to use a Python projection library: Porj, and systematically revealed the projected X-Y difference and the displacement difference caused by the different projections * Presented the topic to the Japanese Visiting Group and at the USTC Graduate Forum (an academic forum of which speakers are excellent graduates) | |
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| * **Post Seismic Deformation Following the 14-16 April Kumamoto, Japan, Earthquake Sequence** | *09/2019 – present* |
| * Learned how to download and process the GPS data of earthquake area and use a MATLAB script to process it and get the three-years velocity field of that area after that earthquake * Learn to use PyLith to do the modeling, now trying to figure out how the parameters will control the result and how to adjust the model * Plan to use PyLith (different from VISCOL2.5D used by Fred Pollitz), to look into the three-year post-seismic deformation data and to get a better understanding of the earthquake and the rheology structure and geodynamic process of that area | |
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| **Department of Earth and Environmental Sciences, MSU** | East Lansing, MI |
| Advisor: Prof. Jeff Freymueller | |
| * **Developing Tools for Rapid Calculation of Earthquake Deformation** | *07/2019 – 08/2019* |
| * Investigated five different software programs for computing earthquake displacements, including the PSGRN/PSCMP written by Dr. Rongjiang Wang at GFZ, and STATIC1D written by Fred Pollitz at USGS * Developed code (Unix shell scripts and MATLAB) to convert different files formats of a certain earthquake source models into inputting a uniform USGS format and then made standard input file for each five programs considering the difference of the given point of the fault patches, and also made a uniform output * Investigated the differences in the programs and found the differences in handling the projection of geographic (latitude, longitude) coordinates into planar x-y coordinates | |
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| **COMPUTER SKILLS** | |
| Unix/Linux shell, MATLAB, C, C++, Fortran, Python | |