Xiaochuan Tian (Kelvin)

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EDUCATION

PhD Candidate in Geophysics at Columbia University   Expected: 2020

ONGOING RESEARCH

Thermal-Mechanical Models for Huge Volcanism During Rifting
- Implement Tracer leads to 10-fold increase in accuracy for quantifying results.
- Parallelize part of the new code results in a 15 percent speedup.
- Global data analysis on Seismic reflection data yields global plate strength.
- Field trip: Volcanology at Azores (2017 Summer)
- Publication: *Tian, X. and Buck, W.R., Weak Lithosphere at Rifting Margins: Constraints from Seaward Dipping Reflectors, Journal of Geophysical Res.,(Under review)*
- International Conference Talk at AGU Fall Meeting (2017 Dec.)

Machine Learning for Numerical Earthquake Prediction
- Field work: deploy CERI seismic stations in north Kentucky. (2014 Fall)
- Apply Machine Learning to Predict Earthquakes in Numerical Models

3D Numerical Models of Tectonics and Magmatism at Mid-ocean Ridges
- Apply Supercomputers Tianhe 2 and Stampede for MPI computing with up to thousands of cores
- Publication: *Tian, X., and E. Choi (2016), Effects of axially variable diking rates on faulting at slow spreading mid-ocea ridges, Earth Planet. Sci. Lett.*
- International Conference Talk at AGU Fall Meeting for the published paper (2016 Dec.)

ACTIVITIES

Research Cruise: RV Atlantis for 37 days   June 2018 to July 2018
North Atlantic Ocean
- Watch stander for monitoring seismic, bathymetric, magnetic and gravity data collection.
- Process raw sonar data to produce bathymetry maps.
- Develop physical-based AI Ping editing shell scripts that increase accuracy and efficiency.

Geology Field Camp Team Leader   May 2012 to July 2012
Chaohu Geological Education Base, Anhui, China
- Designed route with *Google Earth* and navigated the team with *GPS*.
- Constructed a geologic map with teammates based on field mapping data.

Extra-Curricular Activities
- Leader of Columbia University Buddhism Association, Columbia U., 2017 to 2018.
- Champion of Ping Pong Tournament, CERI, University of Memphis, 2014.
- Champion of 2011 SYSU 3 vs 3 Basketball Tournament, SYSU, 2011.
- Captain of Department of Earth Sciences Basketball Team, SYSU, 2009 to 2010.
- Team Member of 2011 Shenzhen 26th Summer Universiade Torch Relay. (Rode a bicycle for 2000 km in 36 days relaying the Torch in eastern China.)

SKILLS
- Programming skills: Shell Scripting, C, Fortran, R, Python, MATLAB, git.