

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 <ul style="list-style-type: none">• Implement Tracer leads to 10-fold increase in accuracy for quantifying results.• Parallelize parts of the code FLAC and leads to a 15% speedup.• Global data analysis on Seismic reflection data yields global plate strength.• Field trip: Volcanology at Azores (2017 Summer)• Publication: <i>Tian, X. and Buck, W.R., Weak Lithosphere at Rifting Margins: Constraints from Seaward Dipping Reflectors, Journal of Geophysical Res., (Under review)</i>• International Conference Talk at AGU Fall Meeting (2017 Dec.) Machine Learning for Numerical Earthquake Prediction <ul style="list-style-type: none">• Benchmark numerical models with previous studies in terms of all statistical features.• Apply Machine Learning algorithms to better Predict numerical Earthquakes. 3D Numerical Models of Tectonics and Magmatism at Mid-ocean Ridges <ul style="list-style-type: none">• Apply Supercomputers Tianhe 2 and Stampede for MPI computing with up to thousands of cores• Publication: <i>Tian, X., and E. Choi (2016), Effects of axially variable diking rates on faulting at slow spreading mid-ocean ridges, Earth Planet. Sci. Lett.</i>• 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 <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• Designed route with <i>Google Earth</i> and navigated the team with <i>GPS</i>.• Constructed a geologic map with teammates based on field mapping data. Extra-Curricular Activities <ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Programming: Shell Scripting, C, Fortran, R, Python, MATLAB, git.	