

# Participant Introductions



**Alex Dolcimascolo** - [alex.dolcimascolo@dnr.wa.gov](mailto:alex.dolcimascolo@dnr.wa.gov)

Alex is a Tsunami Geologist in the hazards section of the Washington Geological Survey. Alex has a research background in tsunami modeling and completed his M.S. degree at Central Washington University in Geological Sciences. For Alex's thesis work, he used the tsunami historical record and paleotsunami deposits to interpret pre-instrumental earthquake rupture parameters in south-central Chile.

**Alice-Agnes Gabriel** - [gabriel@geophysik.uni-muenchen.de](mailto:gabriel@geophysik.uni-muenchen.de)

I am a seismologist and high-performance computing enthusiast. I am interested in understanding the physics of earthquakes using theoretical analysis, physics-based forward models, innovative observation techniques and high-performance computing to bridge spatio-temporal scales, and interlace earthquake dynamics with long-term deformation, seismic cycling, tsunami genesis and laboratory experiments in large-scale collaborative research projects.



[www.geophysik.uni-muenchen.de/Members/gabriel](http://www.geophysik.uni-muenchen.de/Members/gabriel)  
[www.ascete.de](http://www.ascete.de)

**Anne Tréhu** - [trehu@coas.oregonstate.edu](mailto:trehu@coas.oregonstate.edu)

The overarching objective of much of my research is to try to better understand the impact of geologic structure on slip during large subduction zone earthquakes.

**Baoning Wu** - [bwu015@ucr.edu](mailto:bwu015@ucr.edu)

I am currently a PhD student in geophysics in the Department of Earth Sciences at the University of California, Riverside. Starting from September 2016, I joined the Earthquake Processes & Geophysics group at UCR working with Dr. David Oglesby. I received my BSc degree in geophysics from Peking University, China in 2016. My current research focuses on developing physical models to explain yet unclear earthquake phenomena. More info can be found on my personal page:



<https://sites.google.com/ucr.edu/baoningwu>.

My current projects include: 1. Developing a physical model to explain Very Low Frequency Earthquakes, a type of unusually long duration, low frequency earthquake signal observed in the subduction zone. 2. Developing a physical model to explain the anomalous long event duration and large rupture jumping in the 2016 M7.8 Kaikoura, New Zealand earthquake. 3. Investigating the physical meaning of the back-projection method, which is a recently developed technique to image the earthquake rupture process.



**Brittany Erickson** - [bae@uoregon.edu](mailto:bae@uoregon.edu)

I develop numerical methods for partial differential equations in geoscience applications. Primarily I focus on code development for earthquake cycle simulations and co-lead the SCEC-SEAS code verification project. My work is listed on my website <https://ix.cs.uoregon.edu/~bae/>.

**David Schmidt - [dasc@uw.edu](mailto:dasc@uw.edu)**

I study interseismic deformation on subduction zones, including megathrust locking, slow slip events, and forearc deformation. I am also actively pursuing seafloor geodetic data to constrain the time dependent strain release and tsunamigenic potential near the trench.

(<http://faculty.washington.edu/dasc>)

**Dmitry Garagash - [garagash@dal.ca](mailto:garagash@dal.ca)**

I am interested in physics and mechanics of slow and fast fault slip and its coupling with pore fluids across temporal and spatial scales (from mantle/dehydration volatiles fault transport, as it shapes long term fault strength, to anthropogenic fluid injection, to coseismic fault weakening by thermal pressurization and dehydration).

<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2011JB008889>.

[https://www.researchgate.net/profile/Dmitry\\_Garagash](https://www.researchgate.net/profile/Dmitry_Garagash).



**Doug Toomey - [drt@uoregon.edu](mailto:drt@uoregon.edu)**

My lab's research focus is on tectonic plate boundaries and hotspots, where we have pioneered the use of ocean bottom seismology to study geodynamic and volcanic processes. We use a wide variety of seismic methods (body and surface wave tomography, seismicity, ambient noise) and we are actively developing imaging methods for strongly heterogeneous and anisotropic media. Website:

<https://blogs.uoregon.edu/dougtoomey/>



**Elizabeth (Betsy) Madden - [betsymadden@gmail.com](mailto:betsymadden@gmail.com)**

I use modeling tools to study the processes that form the geologic structures we observe in the field and interpret from data, and how structure influences behavior. In the past, I have focused on how fault geometry affects fault mechanics and earthquake dynamics. More recently, I have been developing methods for coupled earthquake-tsunami modeling. These were recently shared on EarthArXiv in the form of test cases (<https://eartharxiv.org/rzvn2/>). We hope that these test cases become

community benchmarks for coupled modeling. At the Workshop, I will share dynamic rupture models of the 2004 Sumatra earthquake and Indian Ocean tsunami. Earthquake models that incorporate high fluid pressure have initial conditions that honor observations of low differential stress and low fault strength and produce reasonable rupture dynamics. However, coupling with tsunami models reveals that these reasonable model earthquakes produce no tsunamis. In contrast, extremely large model earthquakes with low fluid pressure produce reasonable tsunamis. At the workshop, I hope to learn more about the heterogeneity of fluid pressure within subduction zones and how to best incorporate these observations into the models.

**Elizabeth Sherrill - [sherrile@indiana.edu](mailto:sherrile@indiana.edu)**

I am a graduate student at Indiana University. My current work, with Dr. Kaj Johnson, is focused on modeling afterslip and mantle flow at Nankai subduction zone. I am interested in using different geophysical methods to better understand the mechanics of megathrust earthquake-producing faults.



**Emma Hill - [ehill@ntu.edu.sg](mailto:ehill@ntu.edu.sg)**

I am an Assoc Prof at the Asian School of the Environment at Nanyang Technological University, Singapore, and I lead the Geodesy Group at the Earth Observatory of

Singapore. Our research focuses on studying natural hazards and sea-level change in Southeast Asia, using space geodesy and numerical modelling. Much of our recent research has focused on understanding the tectonic behavior of the Sumatran subduction zone, which has generated a host of great earthquakes in the last 15 years. We are also studying the tectonics of Myanmar, India, Bangladesh and Bhutan. Much of our work has incorporated both geodetic and geologic data, to bridge a range of timescales and megathrust behaviors. My website is at <http://emmahill.squarespace.com>. You can also learn about our parallel work in disaster response using remote sensing at [https://twitter.com/eos\\_aria](https://twitter.com/eos_aria).

**Eric Dunham - [edunham@stanford.edu](mailto:edunham@stanford.edu)**

Dynamic rupture, tsunami, and earthquake sequence simulations;  
<https://doi.org/10.1007/s00024-018-1990-y>,  
<https://pangea.stanford.edu/~edunham/index.html>.

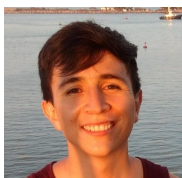


**Eric Lindsey - [elindsey@ntu.edu.sg](mailto:elindsey@ntu.edu.sg)**

I'm a postdoctoral fellow at the Earth Observatory of Singapore. I collect and use geodetic data to observe tectonic deformation around Southeast Asia, and I construct new types of models to more accurately infer the rate of slip on faults, with an emphasis on megathrusts (Sumatra, Myanmar-Bangladesh, and the Himalaya).  
Website: <https://www.planetmechanic.net/>.

**Erin Wirth - [ewirth@usgs.gov](mailto:ewirth@usgs.gov)**

My research focuses on earthquake hazards, specifically in subduction zone settings. Some of my recent work includes 3-D numerical simulations of M9 Cascadia earthquakes and quantifying the amplification of ground shaking in deep sedimentary basins. (This work motivated the City of Seattle to revise their design recommendations for tall buildings within the Seattle Basin.) I integrate my work with geologic and geophysical observations from recorded earthquakes, as well as work closely with engineers and social scientists to improve earthquake resilience in the Pacific Northwest.  
<https://www.usgs.gov/staff-profiles/erin-wirth-moriarty>.



**Fernando Salazar-Monroy - [esalazarm@ingen.unam.mx](mailto:esalazarm@ingen.unam.mx)**

I am a Ph.D. Candidate in Earth Sciences at the UNAM's Institute of Engineering. I am currently engaged in investigating the use of numerical modeling and high-performance computing, to perform joint earthquake-tsunami simulations and estimate its possible impact along the Mexican Pacific Coast.

**Geena Littel - [geenalittel10@gmail.com](mailto:geenalittel10@gmail.com)**

I'm a graduate student at the University of British Columbia, studying earthquake seismology with Michael Bostock. I research earthquakes & earthquake source processes in the Cascadia region, in particular tectonic tremor and low-frequency earthquakes.



**Haipeng Luo - [hpluo@uvic.ca](mailto:hpluo@uvic.ca)**

I study earthquake cycles in subduction zones, including the nature of megathrust locking and slip, crustal deformation, and stress evolution.

**Jakir Hossen - [md.hossen@colorado.edu](mailto:md.hossen@colorado.edu)**

I am a CIRES visiting fellow at the University of Colorado Boulder working on tsunami science. My current research interest is to develop a data assimilation method to improve tsunami forecasting.



**Jean-Arthur Olive - [olive@geologie.ens.fr](mailto:olive@geologie.ens.fr)**

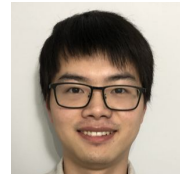
I am a geodynamicist studying brittle deformation at tectonic plate boundaries. I am particularly interested in the links between geological deformation and its short-term manifestation during seismic cycles. Webpage: <https://jaolive.weebly.com>. Twitter: <https://twitter.com/jaodynamics>.

**Jessica (Donovan) Velasquez - [jessica.velasquez@rms.com](mailto:jessica.velasquez@rms.com)**

I currently work on seismic source modeling for application in risk models. I am interested in source processes, rupture behavior, source interactions, recurrence modeling, and earthquake education/preparedness/outreach. <https://www.linkedin.com/in/jrvel/>

**Jiuxun Yin - [jiuxun\\_yin@g.harvard.edu](mailto:jiuxun_yin@g.harvard.edu)**

Bridging seismic observations and rupture dynamics (website: <https://scholar.harvard.edu/yinjiuxun/home>)



**Joan Gomberg - [gomberg@usgs.gov](mailto:gomberg@usgs.gov)**

I have particular interest in topics related to the variation in ways that faults slip, earthquake triggering, and most recently seafloor measurement of tectonic deformation. [https://www.usgs.gov/staff-profiles/joan-gomberg?qt-staff\\_profile\\_science\\_products=3#qt-staff\\_profile\\_science\\_products](https://www.usgs.gov/staff-profiles/joan-gomberg?qt-staff_profile_science_products=3#qt-staff_profile_science_products).



**John Platt - [jplatt@usc.edu](mailto:jplatt@usc.edu)**

Structural geology and mechanics of accretionary complexes, thrust belts, transform fault systems, and metamorphic core complexes. Stress, strain rate, and rheology of ductile shear zones in the crust and mantle. Tectonics of the Alps, Betic-Rif arc, Franciscan Complex, Makran accretionary wedge. <https://dornsifecms.usc.edu/john-platt/>.

**Jonathan Delph - [jdelph@uoregon.edu](mailto:jdelph@uoregon.edu)**

I use passive source seismic techniques to image the structure of the crust and upper mantle of the Earth, mainly focusing on convergent margins. My recent research relates to understanding how fluids modify the seismic characteristics in subduction zones. More about this and other research I've done can be found on my website: <https://jrdelph.wordpress.com/>





**Judith Hubbard** - [judith.a.hubbard@gmail.com](mailto:judith.a.hubbard@gmail.com)

Judith Hubbard is a structural geologist who studies the links between fault geometry, earthquake behavior, and tsunami generation at convergent margins. She works on problems in Nepal, Bangladesh, China, California, and subduction zones around the world. <https://sites.google.com/site/judithahubbard/home>

**Junle Jiang** - [jjiang@cornell.edu](mailto:jjiang@cornell.edu)

I am a postdoc at Cornell. I study earthquake faulting and crustal deformation, and am particularly interested in connecting geophysical models and observations across multiple time scales. <https://jile.github.io>

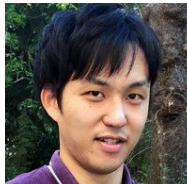


**Katie Woods** - [katie.woods@vuw.ac.nz](mailto:katie.woods@vuw.ac.nz)

I am a PhD student at Victoria University of Wellington, New Zealand. My research focuses on investigating Hikurangi subduction zone slow slip events using geodesy and seismology - in particular focusing on using seafloor instruments to resolve the spatial and temporal behaviour of offshore events where the SSEs are currently unconstrained.

**Kelly Olsen** - [kolsen@utexas.edu](mailto:kolsen@utexas.edu)

I am a 4th year PhD student at the University of Texas Institute for Geophysics. I use 2D seismic reflection data and seismic velocities to infer rock properties and interpret structure in the subduction zones off of south-central Chile and Hikurangi.



**Kurama Okubo** - [kurama\\_okubo@fas.harvard.edu](mailto:kurama_okubo@fas.harvard.edu)

Working on dynamic rupture modeling using combined Finite-Discrete Element Method (FDEM). Recent publication: <https://doi.org/10.1029/2019JB017304>. Personal website: <https://kura-okubo.github.io>

**Lauren S Abrahams** - [lbraha2@stanford.edu](mailto:lbraha2@stanford.edu)

My focus is on numerical modeling of natural hazards. This includes understanding rupture dynamics from tectonics setting to Antarctic ice streams. Recently, I've started studying earthquake tsunamigenesis.



**Leif Karlstrom** - [leif@uoregon.edu](mailto:leif@uoregon.edu)

<https://pages.uoregon.edu/leif/markdown/>



**Magali Billen** - [mibillen@ucdavis.edu](mailto:mibillen@ucdavis.edu)

I am a geodynamicist who works on subduction dynamics from the outer rise through the transition zone and into the lower mantle. I am particularly interested in understanding and constraining the complex rock rheology in subduction zones, and linking processes at different time-scale and length-scales through rheology. For example, non-newtonian rheology can lead to unexpected decoupling of plate and asthenospheric flow driven by episodes of buckling and folding in slabs (Magali I.

Billen and Katrina M. Decoupling of Plate-Asthenosphere Motion Caused by Non-linear Viscosity During Slab Folding in the Transition Zone. *Physics of the Earth and Planetary Interiors*, 281, pp. 17-30, 2018). <https://magalibillen.faculty.ucdavis.edu/>

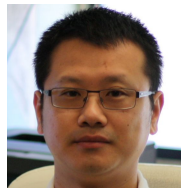


**Mark Simons - [simons@caltech.edu](mailto:simons@caltech.edu)**

I am interested in developing and testing models of the seismogenic character of megathrusts using a combination of geodetic and seismic observations. Of particular interest to me is the extent to which this character impacts long term evolution of the forearc. My web site is <http://web.gps.caltech.edu/~simons>.

**Marlon Ramos - [ramosmd@umich.edu](mailto:ramosmd@umich.edu)**

I'm a third year PhD student working with Yihe Huang at the University of Michigan. My dissertation research focuses on the development of physics-based dynamic earthquake rupture models for the Cascadia Subduction Zone. I am broadly interested in coseismic upper plate deformation, relating finite-source fault effects to seismic observation, and applications to earthquake early warning. My goal for this workshop is to garner ideas and feedback for the dynamic rupture models I have completed or am currently working on.



**Matt Wei - [matt-wei@uri.edu](mailto:matt-wei@uri.edu)**

My lab uses geophysical data and numerical models to study earthquakes and monitor nuclear tests. <https://weilaburi.wixsite.com/home>.

**Michael Bostock - [bostock@eos.ubc.ca](mailto:bostock@eos.ubc.ca)**

I am seismologist at UBC with interests in the seismicity and structure of convergent plate boundaries; Cascadia, in particular. My current interests focus on the inter-relations between microseismicity, fluids and stress perturbations.



**Michele Cooke - [cooke@geo.umass.edu](mailto:cooke@geo.umass.edu)**

I investigate fault evolution and earthquake mechanics using both numerical models and scaled physical experiments that simulate deformation of the Earth's crust. I investigate crustal deformation over a wide range of spatiotemporal scales ranging from the evolution of crustal fault systems over millions of years to the generation of micro-fractures during earthquake ruptures. Within subduction zones, I'm particularly interested in strain partitioning within the upper plate.

**Monica Wolfson-Schwehr - [monica.schwehr@gmail.com](mailto:monica.schwehr@gmail.com)**

I'm a postdoctoral fellow at the Monterey Bay Aquarium Research Institute. In my research, I use a prototype ultra-high resolution mapping system fielded on an ROV to observe how submarine canyon processes shape the seafloor on a sub-meter scale. My research interests focus on bringing together different technologies and data types to further our understanding of marine geologic environments. During my PhD, I combined multibeam bathymetry data, earthquake relocation techniques, statistical

analysis, and finite element modeling to investigate how physical fault structure relates to seismic behavior and the underlying thermal structure of mid-ocean ridge transform faults. In terms of subduction zone modeling, I am interested in using finite element analysis to look at how spatiotemporal variations in surface roughness and friction along the plate boundary interface affect the morphotectonic structure of the upper plate. Website: <https://schwehrwolf.wixsite.com/monica>

**Morgan Moschetti** - [mmoschetti@usgs.gov](mailto:mmoschetti@usgs.gov)

I am a seismologist at the U.S. Geological Survey in Golden, Colorado. We work to understand earthquake ground-shaking phenomena and to model ground motions for seismic hazard products. Our work includes measurements and observational analyses, as well as the use of ground-motion simulations.

**Rishav Mallick** - [rishav001@e.ntu.edu.sg](mailto:rishav001@e.ntu.edu.sg)

I am a graduate student at the Earth Observatory of Singapore. I am interested in the kinematics and dynamics of localized and distributed deformation in the vicinity of active faults, from the earthquake cycle time-scale (seconds to years) to the time-scale over which mountains are built (millions of years). Webpage: <https://quakesandmechanics.wordpress.com/>

**Rob Witter** - [rwitter@usgs.gov](mailto:rwitter@usgs.gov)

I'm a USGS Research Geologist at the Alaska Science Center, Anchorage. I apply aspects of geomorphology, paleoseismology, geodesy, and sea-level studies to decipher the geologic record of ancient earthquakes. Most of my work focuses on great subduction earthquakes capable of generating tsunamis. What I find out contributes to seismic and tsunami hazards assessments used to strengthen building codes and reduce tsunami risk."



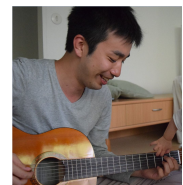
**Roland Bürgmann** - [burgmann@seismo.berkeley.edu](mailto:burgmann@seismo.berkeley.edu)

Active tectonics and rheology of faults (doi: 10.1016/j.epsl.2018.04.062) and rocks (doi: 10.1146/annurev.earth.36.031207.124326).  
<http://seismo.berkeley.edu/~burgmann/>

**Ryoichiro Agata** - [agatar@jamstec.go.jp](mailto:agatar@jamstec.go.jp)

I am a postdoctoral researcher working at JAMSTEC in Japan. My research interest is on geodetic slip inversion and numerical simulation of post-earthquake deformation and earthquake cycles. Website: <https://sites.google.com/view/agatar/home>. Paper on geodetic slip inversion introducing covariance components: <https://eartharxiv.org/p5q6d/>.

Paper on post-earthquake deformation in the 2011 Tohoku-Oki earthquake: <https://www.nature.com/articles/s41467-019-08984-7>.



**Shannon Fasola** - [fasolasl@miamioh.edu](mailto:fasolasl@miamioh.edu)

I am a Ph.D. student in my last year at Miami University. Part of my research focuses on the Mexico Subduction Zone, specifically in Oaxaca looking at earthquake swarms and slow slip which we believe occur on a sliver fault that accommodates

the oblique subduction in this area. (Fasola et al., 2019:  
<https://www.pnas.org/content/pnas/116/15/7198.full.pdf>).

**Shuo Ma - [sma@sdsu.edu](mailto:sma@sdsu.edu)**

Research interests: Earthquake rupture dynamics, crustal deformation, and tsunami

Personal website: <https://quake.sdsu.edu>

Recent relevant publication: <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2019GL083148>

**Shuoshuo Han - [han@ig.utexas.edu](mailto:han@ig.utexas.edu)**

I am a marine geophysicist interested in the structure, tectonic processes, and related hazards at subduction zones, and the formation and evolution of oceanic lithosphere. I use active source seismic data and ocean drilling data to image the subsurface structure and infer its physical properties.

Webpage: <https://ig.utexas.edu/staff/shuoshuo-han/>

**Suli Yao - [1155100916@link.cuhk.edu.hk](mailto:1155100916@link.cuhk.edu.hk)**

I am a PHD graduate student. My present research interests focus on 3-D dynamic rupture simulations for rupture process and ground motion predictions from interseismic locking models for subduction zones. <https://doi.org/10.1016/j.epsl.2019.05.030>.

**Susan Bilek - [susan.bilek@nmt.edu](mailto:susan.bilek@nmt.edu)**

Professor of Geophysics at New Mexico Tech (<https://nmt.edu/academics/ees/faculty/sbilek.php>), earthquake seismologist who studies both large and small megathrust earthquakes, as well as how subduction zone structures impact rupture.

**Tatsuhiko Saito - [saito-ta@bosai.go.jp](mailto:saito-ta@bosai.go.jp)**

I am interested in the mechanics of tsunamis and earthquakes.

<https://link.springer.com/book/10.1007%2F978-4-431-56850-6#about>.

Strain energy paper: <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2018JB015839>.



**Thorsten Becker - [twb@ig.utexas.edu](mailto:twb@ig.utexas.edu)**

I'm a geodynamicist interested in the links between mantle convection and surface tectonics, including on earthquake cycle timescales. Recent work includes collaborative studies on the 2011 Tohoku-oki M9 earthquake's pre- and post-seismic signatures in terms of surface deformation and crustal stress.

**Tiegan Hobbs - [tiegan.hobbs@canada.ca](mailto:tiegan.hobbs@canada.ca)**

My previous work focuses on subduction zone physics and active tectonics in British Columbia and Costa Rica. Currently, I am developing a catalog of scenario earthquakes for risk modeling in Canada, as part of the 2020 National Seismic Risk Profile. I am also interested in multihazard modeling and the collection of data from extreme field locations such as volcanoes and glaciers, from Antarctica to Alaska.

<http://www.tieganhobbs.com>.





**Tim Lin - [jiunting@uoregon.edu](mailto:jiunting@uoregon.edu)**

I am a 3rd year PhD student at UO working with Amanda Thomas and Diego Melgar on the project of Machine learning on subduction zones earthquake early warning (<https://sites.google.com/site/jtimweb/>).

**Tyler Newton - [tjnewton.uni@gmail.com](mailto:tjnewton.uni@gmail.com)**

I study the crustal stress field and mechanics of faulting in megathrust systems that host slow fault slip. I'm a PhD candidate at U of Oregon working with Amanda Thomas. Website: <http://tnewton.com/>. Twitter: <https://twitter.com/seismicdisarray>



**Valerie Sahakian - [vjs@uoregon.edu](mailto:vjs@uoregon.edu)**

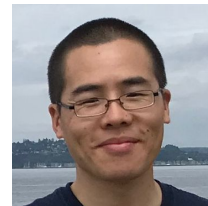
I am an Assistant Professor at the University of Oregon. I have worked with marine active-source seismic data to characterize fault structures (mostly in Southern California), and work on ground-motion estimation.

**Wenyuan Fan - [wfan@fsu.edu](mailto:wfan@fsu.edu)**

Observational seismology. <http://myweb.fsu.edu/wfan/>.

**Xiaotao Yang - [xiaotaoyang@fas.harvard.edu](mailto:xiaotaoyang@fas.harvard.edu)**

I am a seismologist, focusing on addressing questions in tectonics, earthquakes, and volcanoes. At this workshop, I am presenting our recent research in characterizing the earthquake ground motions at the Cascadia accretionary wedge. With my moving to Purdue University next fall, I look forward to furthering contributions to the community and collaborations across disciplines. Check out more about my research at <https://sites.google.com/site/xiaotaoyanggeo>.



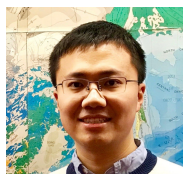
**Ylona van Dinther - [y.vandinther@uu.nl](mailto:y.vandinther@uu.nl)**

My research focuses on developing and applying dynamic models bridging tectonic and seismicity time scales on subduction zones, orogens and strike slip faults. Besides linking to observations of particular interest I also developed an ensemble data assimilation approach to estimate fault states more statistically consistently. I worked for almost 10 years at ETH Zurich (Switzerland) as a PhD, post doc, lecturer and group leader and since last year I am an Assistant Professor at Utrecht University

(Netherlands).

**Yongfei Wang - [yongfeiw@usc.edu](mailto:yongfeiw@usc.edu)**

Rupture dynamics [wangyf.github.io](http://wangyf.github.io).



**Zhuo Yang - [yangz@g.harvard.edu](mailto:yangz@g.harvard.edu)**

I am a PhD candidate in Harvard University. My research focuses on induced seismicity, pore fluid interaction with earth materials and hydrologic processes. I am

also interested in earthquake source processes and dynamics of earthquake rupture propagation.