Meng (Matt) Wei

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APPOINTMENT

09/2016 Assistant Professor, University of Rhode Island
11/2013 Assistant Marine Research Scientist, University of Rhode Island
02/2011 Postdoctoral Investigator, Woods Hole Oceanographic Institution (Advisor: Jeff McGuire)

EDUCATION

01/2011 **Ph. D. in Earth Sciences**
Scripps Institution of Oceanography, University of California at San Diego
Thesis: "Observations and modeling of shallow fault creep along the San Andreas fault system"
Advisor: David Sandwell

06/2004 **B. S. in Geophysics**
Peking University, Beijing, China
Advisor: John Y. Chen

RESEARCH INTERESTS

- Natural hazards
- Tectonic geodesy
- Numerical modeling
- Analyzing large-scale geophysical data

PUBLICATIONS

Journal Publications (Peer-reviewed):

Wei, M. (2017), Location and Source Characteristics of the January 6, 2016 North Korean Nuclear Test Constrained by InSAR, *Geophysical Journal International*, 209 (2), 762-769, doi: https://doi.org/10.1093/gji/ggx053.

Wei, M., Y. Liu, Y. Kaneko, J. McGuire, and R. Bilham (2015), Dynamic triggering of creep events in the Salton Trough, Southern California by regional M ≥ 5.4 earthquakes constrained by geodetic observations and numerical simulations, *Earth and Planetary Science Letters*, 427, 1-10, doi:10.1016/j.epsl.2015.06.044.

Wei, M., and J. McGuire (2014), The Mw 6.5 offshore Northern California earthquake of 10 January 2010: Ordinary stress drop on a high-strength fault, *Geophysical Research Letters*, 41, doi:10.1002/2014GL061043.

Wei, M., Y. Kaneko, Y. Liu, and J. McGuire (2013), Episodic fault creep events in California controlled by shallow frictional heterogeneity, *Nature Geoscience* 6, 566–570, doi:10.1038/ngeo1835.

Wei, M., J. McGuire, and E. Richardson (2012), A slow slip event in the south central Alaska Subduction Zone and related seismicity anomaly, *Geophys. Res. Lett.*, 39, L15309, doi:10.1029/2012GL052351.

Wei, M., D. T. Sandwell, Y. Fialko, and R. Bilham (2011), Slip on faults in the Imperial Valley triggered by the 4 April 2010 Mw 7.2 El Mayor-Cucapah earthquake revealed by InSAR, *Geophysical Research Letters,* 38, L01308, doi:10.1029/2010GL045235.

Wei, M., D. T. Sandwell, and B. Smith-Konter (2010), Optimal combination of InSAR and GPS for measuring interseismic crustal deformation, *Advances in Space Research*, 46, 2, 236-249, doi: 10.1016/j.asr.2010.03.013.

Wei, M. and D. T. Sandwell (2010), Decorrelation of ALOS and ERS interferometry over vegetated areas in California, *IEEE Trans. on Geoscience and Remote Sensing*, 48, 2942-2952, doi: 10.1109/TGRS.2010.2043442.

Wei, M., D. Sandwell, and Y. Fialko (2009), A silent Mw 4.7 slip event of October 2006 on the Superstition Hills fault, southern California, *Journal of Geophysical Research*, 114, B07402, doi:10.1029/2008JB006135.

Wei, M. and D. T. Sandwell (2006), Estimates of Ridge-Axis Heat Flow from Depth and Age Data, *Tectonophysics,* 417, 325-335.

Other publications:

Wei, M. and D. T. Sandwell (2011), The Mw 7.2 El Mayor-Cucapah Earthquake in Baja California: Extensive Liquefaction Identified in ALOS InSAR Data, *Alaska SAR Facility Newsletter*.

Sandwell, D., R. Mellors, X. Tong, **M. Wei**, and P. Wessel (2011), Open Radar Interferometry Software for Mapping Surface Deformation, *Eos Trans. AGU,* 92(28), doi:10.1029/2011EO280002.

Sandwell, D., R. Mellors, X. Tong, **M. Wei**, and P. Wessel (2011), GMTSAR: An InSAR Processing System based on Generic Mapping Tools, *Scripps Institution of Oceanography Technical Report*.

GRANT AWARDS ($802,489)

3/2017 - 3/2019 "EAGER: Quantification of Ocean Water Column Contributions to Bottom Pressure offshore Cascadia using Current and Pressure Recording Inverted Echo Sounders", *National Science Foundation-Marine Geology and Geophysics*, $99,989. **PI: Meng Wei**, co-PI: Randolph Watts and Kathleen Donohue.

7/2016 - 10/2017 "Ground-truth Earthquakes in Iran with a Joint Method of InSAR and Seismic Data", *Air Force Research Laboratory*, $153,639. **PI: Meng Wei**, co-PI: Yang Shen and Xueyang Bao.

7/2014 – 7/2016 "A Distributed Coaxial Cable Strainmeter for Earth Monitoring", *National Science Foundation-Earth Sciences: Instrumentation and Facilities*, $150,000. PI: Tao Wei, **co-PI: Meng Wei**, Yang Shen.

7/2014 – 7/2016 "Earthquake triggering and synchronization on oceanic transform faults", *National Science Foundation-Marine Geology and Geophysics*, $167,926. **PI: Meng Wei**, co-PI: Yang Shen.

1/2013 – 12/2013 "Static and dynamic triggering of fault creep on strike-slip faults", *National Science Foundation-Geophysics,* $150,000. **PI: Meng Wei**, co-PI: Jeff McGuire.

1/2012 – 12/2013 "Investigation of causes and effects of transient deformation on the Superstition Hills Fault with physics based model", *Southern California Earthquake Center (SCEC)*, two 1-year proposals, $40,000 in total. **PI: Meng Wei,** co-PI: Jeff McGuire.

7/2012 – 6/2014 "Determining the optimal design of a seafloor geodetic observatory on the Cascadia Subduction Zone", *WHOI Deep Ocean Exploration Institute,* $40,935. **PI: Meng Wei**, co-PI: Jeff McGuire.

TEACHING EXPERIENCES

Fall 2016 GEO100–Environment Geology, URI
- Provided flipped classroom experiences to enhance student learning
- Class size: 90 students

July 24-31, 2016 Lecturer, International summer short course on earthquake physics, Peking University,
July 5-10, 2015 Beijing, China
- Gave lectures on surface deformation related to earthquakes and provide hands-on training for the forward and inverse modeling of geodetic data
- Class size: 100 graduate students

Spring 2015 Lecturer, GEO100–Environment Geology and GEO113–Natural Disasters, URI
- Developed new course materials
- Provided flipped classroom experiences to enhance student learning
- Class size: GEO100 (2 sessions, ~180 total); GEO113 (1 session, ~100)

Summer 2012 Lecturer, Brushing Up Mathematical Skills for Engineers & Scientists, WHOI
- Developed and gave lectures on linear algebra, calculus, and Matlab
- Class size: 11 first-year graduate students with diverse math training

Fall 2007 Teaching Assistant, Remote Sensing, University of California San Diego
- Evaluated homework
- Planned and advised lab experiments on remote sensing data processing
- Class size: 16 seniors and graduate students

MENTORING EXPERIENCES

Sep 2016- present Mentoring postdoc Samuel Bell
- Project title: "Ground-truth Earthquakes in Iran with a Joint Method of InSAR and Seismic Data"

Summer 2016 Mentoring Whitney Schultz, SURFO student from Colorado School of Mines
- Project title: "Tectonic tremor and slow slip events in South Central Alaska"

Summer 2015 Mentoring Blake Cross, SURFO student from Colorado School of Mines
- Project title: "Search for tectonic tremor in South Central Alaska"

Feb-Sep 2015 Mentoring Haotian Li, a visiting student to URI from Peking University of China
- Project title: "Numerical modeling of earthquake interactions on oceanic transform faults"

Fall 2014 Mentoring Travis Winter, an undergraduate student at University of Rhode Island
- Project title: "Search for repeating large earthquakes on oceanic transform faults"

Spring 2013 Mentoring Ben Webber, an undergraduate student at McGill University
- Provided instructions on static slip inversion of slow slip events

FIELD EXPERIENCES

2006 and 2010 Field survey of fault surface slip, Superstition Hills Fault, CA
- Identified the surface trace of a silent slip event on the fault
- Measured slip offset along the fault trace

2006 and 2008 Campaign GPS survey, Salton Trough, CA
- Measured the precise location of geodetic benchmarks near the San Andreas Fault using Ashtech GPS receivers
- Incorporated the data into the catalogue of southern California geodetic dataset

HONORS

2009 Editors' Citation for Excellence in Refereeing for *Geophysical Research Letters*
2002 Canon Scholarship and Outstanding Students Prize, Peking University, China

COMMUNITY SERVICES

2011-2012 Postdoctoral Association Committee, WHOI
2011-2012 International Committee, WHOI

INDUSTRY EXPERIENCES

Fall 2009 Participator, ExxonMobil Short Course, Houston
- Participated a 2-day short course on petroleum exploration

Summer 2007 Intern, ConocoPhillips Inc., Houston
- Developed processing software for data from a Japanese satellite, and analyzed the data to monitor oil field subsidence
- Processed, managed and reconstructed the global geomagnetic data in the team and significantly enhanced the data processing efficiency (x100 hours/year) for the whole team

INVITED TALKS

06/2016 Earthquake Triggering and Synchronization on Oceanic Transform Faults. Woods Hole Oceanographic Institution, Woods Hole, MA.

04/2016 Earthquake Triggering and Synchronization on Oceanic Transform Faults. University of New Hampshire, Durham, NH.

05/2015 Mechanism of spontaneous and triggered continental shallow creep events. AGU Spring Meeting, Montreal, Canada.

10/2014 Episodic creep events controlled by shallow heterogeneity. University of Massachusetts, Amherst, MA

03/2014 Spontaneous and triggered episodic creep events in California - implications for fault mechanics. Lamont-Doherty Earth Observatory, Palisades, NY

12/2013 Mechanism of spontaneous and triggered shallow creep events - Implications for shallow fault zone properties, AGU Fall Meeting, San Francisco, CA

12/2012 Shallow frictional heterogeneity explains episodic fault creep events in California, Peking University, Beijing, China

12/2012 Shallow frictional heterogeneity explains episodic fault creep events in California, University of Science and Technology of China

04/2012 Surface changes on Earth detected from space - application of InSAR and GPS to geo-hazard challenges and tectonic problems, GNS Science, Lower Hutt, New Zealand

02/2012 Aseismic slip transients on strike-slip and subduction faults - implications for fault mechanics, the Earth Observatory of Singapore, Singapore

12/2011 Searching for Strain Transients in PBO GPS data, AGU Fall Meeting, San Francisco, CA

12/2011 Numerical modeling of shallow fault creep triggered by nearby earthquakes, AGU Fall Meeting, San Francisco, CA

09/2011 Network Strain Filter and its applications on GPS data, Strain Transient Workshop, SCEC Annual Meeting, Palm Springs, CA

11/2009 Decorrelation of ALOS and ERS interferometry over vegetated areas in California, 3rd ALOS Joint PI Symposium, Hawaii

06/2008 Creep event on the Superstition Hills fault, Tectonics seminar, University of California Los Angeles, CA

EDITORIAL SERVICES

Reviewer for proposals

- National Science Foundation (mail and panel)

Reviewer for journals

- Geophysical Research Letters, Seismological Research Letters, Journal of Geophysical Research, Solid Earth, Bulletin of the Seismological Society of America, Nonlinear Processes in Geophysics, Geochemistry, Geophysics, Geosystems, Geophysical Journal International, Remote Sensing, Earth Planets and Space, Hydrological processes, Scientific Report

PROFESSIONAL SOCIETY

American Geophysical Union since 2004