

Meng “Matt” Wei

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EDUCATION

- 2004 – 2010 **University of California, San Diego**, La Jolla, CA
Ph.D., Geophysics, expected, March 2011
- Dissertation: Observations and Modeling of Shallow Fault Creep Along the San Andreas Fault System
 - Advisor: Dr. David Sandwell
- 2000 – 2004 **Peking University**, Beijing, China
B. S., Geophysics

PUBLICATIONS

Journal Publications (Peer-reviewed):

- Wei, M.**, D. T. Sandwell, and B. Smith-Konter, “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, 2010.
- Wei, M.** and D. T. Sandwell, “Decorrelation of ALOS and ERS interferometry over vegetated areas in California”, *IEEE Geoscience and Remote Sensing*, 48, 2942-2952, doi: 10.1109/TGRS.2010.2043442, 2010.
- Wei, M.**, D. Sandwell, and Y. Fialko, “A silent Mw 4.7 slip event of October 2006 on the Superstition Hills fault”, southern California, *J. Geophys. Res.*, 114, B07402, 2009.
- Wei, M.** and D. T. Sandwell, “Reply to comment on: Estimates of Ridge-Axis Heat Flow from Depth and Age Data”, *Tectonophysics*, 428,101-103, 2006.
- Wei, M.** and D. T. Sandwell, “Estimates of Ridge-Axis Heat Flow from Depth and Age Data”, *Tectonophysics*, 417, 325-335, 2006.

Manuscripts Submitted and in Preparation

- Wei, M.**, D. T. Sandwell, Y. Fialko, and R. Bilham, “Triggered Slip on Nearby Faults by the 2010 Mw7.2 Baja Earthquake”, draft available upon request.

SELECTED ABSTRACTS

- Wei, M.**, D. T. Sandwell, and B. Smith-Konter, “Optimal Combination of InSAR and GPS for Measuring Interseismic Crustal Deformation”, EarthScope Meeting, 2009.
- Wei, M.** and D. T. Sandwell, Asymmetric Velocity across the San Andreas Fault System: The Effects of Fault Dip, *EOS Trans. AGU*, Fall Meet. Suppl., S21B-1828, 2008.
- Sandwell D. T., B. Smith-Konter and **M. Wei**, “Imaging Crustal Deformation Along The San Andreas Fault System With ALOS InSAR and GPS”, IEEE International Geoscience & Remote Sensing Symposium, 2008.
- Wei, M.**, D. T. Sandwell and Y. Fialko, “Superstition Hills Fault Creep Event on October 2006”, SCEC Annual Meeting, 2008.
- D. T. Sandwell and **M. Wei**, “ALOS Interferometry”, *EOS Trans. AGU*, Fall Meet. Suppl., G51A-07, 2006.
- Wei, M.**, D. T. Sandwell and Y. Fialko, “Resolving Shallow Creep Events on the Southern San Andreas Fault”, SCEC Annual Meeting, 2006.
- Wei, M.** and D. T. Sandwell, “Estimates of Ridge-Axis Heat Flow from Depth and Age Data”, *EOS Trans. AGU*, Fall Meet. Suppl., T41C-1324, 2005.

COMMUNITY SERVICE

Journal Reviewer for

- Geophysical Research Letters
- Bulletin of the Seismological Society of America.

RESEARCH EXPERIENCE

- 2004 – 2010 **Graduate Student Researcher**, IGPP, Scripps Institution of Oceanography, University of California San Diego
- **Software development:** Developed software for processing ALOS data; designed procedure for large satellite dataset processing and developed Python scripts to perform the processing.
 - **Data processing:** Designed optimal way to combine InSAR and GPS for measuring interseismic crustal deformation; processed large dataset of Interferometric Synthetic Aperture Radar (InSAR) in California region to study fault creep; processed seismic data to search for non-volcanic tremor in California; integrated diverse geophysical and geologic data to generate high quality surface deformation map.
 - **Computer modeling:** Modeled a silent slip event and found that the high pore pressures in the unconsolidated sediments control the shallow fault slip phenomenon in the Salton Trough area; developed a new method to model the oceanic heat flow from depth and age data, providing evidence to settle down a scientific controversy; modeled the effect of fault dip on surface deformation and gravity, resulting in the confirmation of the non-vertical fault geometry of the southern San Andreas Fault.
- Summer 2007 **Intern**, ConocoPhillips Inc., Houston, Texas
- Developed software for processing ALOS satellite data; processed satellite data to monitor oil field subsidence in Athabasca Basin, Canada.
 - Assembled global geomagnetic data for convenient data access, saving 100 employee hours/year of searching through different datasets.
- 2003 – 2004 **Undergraduate Research Assistant**, Geodynamics lab, Peking University, Beijing, China
- Completed computer simulation of tectonic plate motions over the last 100 million years; illustrated geological processes such as the opening of the Atlantic Ocean.

TEACHING EXPERIENCE

- Fall 2007 **Teaching Assistant**, Remote Sensing, University of California San Diego
- Planned and advised lab experiments (Matlab); evaluated homework.

INVITED PRESENTATIONS

- 11/2009 Decorrelation of ALOS and ERS interferometry over vegetated areas in California, invited talk, 3rd ALOS Joint PI Symposium, Hawaii
- 6/2008 Creep event on the Superstition Hills fault, invited talk, Tectonics seminar, University of California Los Angeles
- 12/2006 ALOS Interferometry, invited talk, AGU Fall meeting, San Francisco, CA

FIELD EXPERIENCE

- Sep. 2006 and Feb. 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.
- Oct. 2006 Field observation 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.

AWARDS

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