Meng "Matt" Wei

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EDUCATION

Ph. D.   University of California, San Diego   2011   Earth Science
B. S.   Peking University, Beijing, China   2004   Geophysics

PUBLICATIONS

Journal Publications (Peer-reviewed):

Wei, M., D. T. Sandwell, Yuri Fialko, and Roger 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, *Geophys. Res. Lett.,* 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 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, *J. Geophys. Res.*, 114, B07402.

Wei, M. and D. T. Sandwell (2006), Reply to comment on: Estimates of Ridge-Axis Heat Flow from Depth and Age Data, *Tectonophysics,* 428,101-103.

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

SELECTED ABSTRACTS

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

COMMUNITY SERVICE

Journal Reviewer for
- Geophysical Research Letters
- Bulletin of the Seismological Society of America.

RESEARCH EXPERIENCE

2004 – 2011	**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