

Chuntao Liang

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Education:

- Ph.D., Geophysics, expected Summer 2008, Center for Earthquake Research and Information, Department of Earth Science, University of Memphis, TN, USA.
- M.S., Geophysics, December 2003, Department of Geology, University of Illinois at Urbana Champaign, IL, USA.
- M.S., Geophysics, August 2001, Chengdu University of Technology, Sichuan, China.
- B.S., Geophysics, June 1996, Chengdu University of Technology, Sichuan, China.

Research Experience (details on my web):

- **Ambient Noise Tomography**
Applied this technique to the eastern North America and have produced unprecedented high resolution velocity maps for this region. The results are in press, JGR.
- **Wave Gradiometry**
Use dense seismic arrays to measure the spatial gradients of wave amplitudes and then to find earth structure, wave directionality and amplitude variations. Conducted numerical experiments to test the theory and techniques and applied the method to the USArray successfully (papers in review or in preparation).
- **Seismic Tomography**
Eight years of seismic tomography (both body wave and surface wave) experience. Coded most of the programs from data processing to final inversion. Familiar with all major aspects of this technique. Published three papers in the major peer-reviewed journals.

- **Receiver Function**
Applied the three component receiver function technique to seismic array on Tibetan Plateau and the results have been presented at the AGU Fall meeting in 2004 and SSA east section meeting in 2004.
- **Synthetic Seismogram**
Modified the wave number integration program to be applicable for the directed point force to simulate train noise (the original version is only applicable to a moment tensor source); also modified the programs for parallel computing.

Work Experience:

- **Assistant Engineer, Sichuan Seismological Bureau, Chengdu, China.**
1996.7--1998.9. Responsible for the data archiving and processing.
- **Internship, Interferometry Imaging, MicroSeismic Inc., May to August, 2007**
Co-developed a working flow for the interferometry imaging technique to extract reflectivity out of noise data recorded from oil fields. For final results, several reflectors at shallow depth can be clearly identified on the final NMO stacked time section.

Publications (Some are available on my web):

- **Liang, C., C. A. Langston (2008),** Ambient seismic noise tomography and structure of eastern North America, *J. Geophys. Res.*, in press. (Available on my web)
- **Liang, C., C. A. Langston (2008),** Wave Gradiometry for USArray (1): Rayleigh waves, in review. (Available on my web)
- **Liang, C., C. A. Langston (2008),** Wave Gradiometry for USArray (2): body waves, in preparation.
- **Langston, C. A., C. Liang (2007),** Gradiometry for polarized seismic waves, Submitted to *J. Geophys. Res.*
- **Liang, C., and X. Song (2006),** A low velocity belt beneath northern and eastern Tibetan Plateau from Pn tomography, *Geophys. Res. Lett.*, 33, L22306, doi:10.1029/2006GL027926. (Available on my web)
- **Liang, C, X. Song and J. Huang (2004),** Tomographic inversion of Pn travel times in China, *J. Geophys. Res.*, 109, B11304. (Available on my web)
- **Liang, C., J. Zhu, J. Cao,(2000),** 3D Ray Tracing and Application in East Asia, *Computational Techniques of Geophysics and Geochemistry, 2000* (in Chinese)

- **Liang, C**, (1999), Data processing in 3D body wave tomography, *Sichuan Earthquakes, 1999* (in Chinese)

Conference Presentations:

- **AGU 2007:** Wave Gradiometry for USArray.
- **Earthscope annual meeting 2007:** High resolution group velocity model for eastern North America based on ambient noise tomography
- **SSA annual meeting 2007:** Wave Gradiometry applied to geophone array.
- **AGU West Pacific Geophysics Meeting, Beijing, 2006,** Passive seismic imaging and its application in eastern United States
- **AGU 2006:** Ancient rifting zones in eastern North America revealed by the ambient noise surface wave tomography.
- **AGU 2005:** Extracting Green's function out of ambient noise and one explicit explanation based on a wave field division method
- **AGU 2004:** Three Component receiver functions of array data from the Tibetan plateau.
- **AGU 2003:** Moho discontinuity of Tibetan Plateau by Pn inversion.
- **SSA east section 2004:** Comparison of two deconvolution methods for computing three-component receiver functions.
- **AGU 2002:** Pn Tomography of China.

Professional Services:

- Peer Reviewer for BSSA
- Session Co-Chair of Eastern Pacific Geophysical Meeting, 2006: Crust and Upper Mantle Structures Beneath the Tibetan Plateau from Recent Seismic Experiments in Tibet.
- Member of AGU, SSA and SEG

Travel Grants:

- Earthscope annual meeting, Monterey, CA, 2007.
- Earthscope workshop: Geoframe, St. Louis, MO, 2006.
- Earthscope workshop: Advanced Seismic imaging, St. Louis, MO, 2006.
- Earthscope workshop: Controlled Source Seismology, San Antonio, TX, 2007.