

# Curriculum Vitae

## Fan-Chi Lin

University of Utah  
Geology and Geophysics  
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Citizenship: Taiwan  
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### Research Interests

Ambient noise seismology; seismic surface waves; seismic tomography; crust and upper mantle structure; wave propagation; seismic anisotropy; seismic attenuation; surface wave amplification; density tomography.

### Education

2005 to 2009 Ph.D. University of Colorado at Boulder, USA.

**Advisor:** Michael Ritzwoller

2003 – 2005 M.S. Drexel University, USA.

**Advisor:** Guoliang Yang and Steve McMillan

1996 – 2000 B.S. National Tsing Hua University, Taiwan.

### Positions Held

2013 – Assistant Professor, Department of Geology and Geophysics, The University of Utah.

2011 – 2013 Post Doctoral Scholar, Seismological Laboratory, California Institute of Technology.

2009 – 2011 Research Associate, Department of Physics, University of Colorado at Boulder.

2006 – 2009 Research Assistant, Department of Physics, University of Colorado at Boulder.

2005 – 2006 Teaching Assistant, Department of Physics, University of Colorado at Boulder.

2004 – 2005 Research Assistant, Department of Physics, Drexel University.

2003 – 2004 Teaching Assistant, Department of Physics, Drexel University.

2002 – 2003 Research Assistant, Institute of Molecular Biology, Academia Sinica, Taiwan.

### Honors and Awards

SSA Charles F. Richter Early Career Award, 2015.

Speaker of the 2015-2016 EarthScope Speaker Series.

Director's Post Doc Fellowship, Seismological Laboratory, Caltech, 2011.

AGU Fall Meeting Outstanding Student Paper Award 2009.

*Geophysical Journal International* Student Author Award 2008.  
SEG Denver Geophysical Society Scholarship 2008-2009  
SEG GSH/Charlie & Jean Smith Scholarship 2008-2009

### **Professional Services**

Associate Editor for JGR-Solid Earth since 2016.  
Selection Committee for 2016 IRIS Wavefields Demonstration Experiment.  
Plenary Session Organizer of 2016 IRIS Workshop.  
Committee Member of 2015 National EarthScope Meeting.  
Member of Transportable Array Advisory Committee (TAAC) since 2014.  
Peer reviewer for journals (GJI, GRL, JGR, BSSA, EPSL, Geology, and Science Advances) and NSF proposals.  
University of Utah SEG Student Chapter Faculty Advisor since 2013.  
Liaison and Judge for AGU Outstanding Student Paper Award.  
Convener and Chair for Seismology Special Session, WPGM 2010.

**Publications** (PDF files and an up-to-date list available at <http://noise.earth.utah.edu/>)

38. Ball, J., A. Sheehan, J. Stachnik, **F.C. Lin**, W. Yeck, and J. Collins, Lithospheric shear velocity structure of South Island, New Zealand from amphibious Rayleigh wave tomography, submitted.
37. Shen, W., M.H. Ritzwoller, D. Kang, Y. Kim, J. Ning, **F.-C. Lin**, W. Wang, Y. Zheng, and L. Zhou, A seismic reference model for the crust and uppermost mantle beneath China from surface wave dispersion, *Geophys. J. Int.*, submitted.
36. AlTheyab, A., **F.C. Lin**, G.T. Schuster, Imaging Near-surface Heterogeneities by Natural Migration of Back-scattered Surface Waves, *Geophys. J. Int.*, 204, 1332-1341, doi:10.1093/gji/ggv511, 2016.
35. Schmandt, B., **F.C. Lin**, and K. Karlstrom, Distinct crustal isostasy trends east and west of the Rocky Mountain Front, *Geophys. Res. Lett.*, 42, 10,290–10,298, doi:10.1002/2015GL066593, 2015.
34. Huang, H.H., **F.C. Lin**, V. C. Tsai, and K.D. Koper, High-resolution probing of inner core structure with seismic interferometry, *Geophys. Res. Lett.*, 42, doi:10.1002/2015GL066390, 2015.
33. Huang, H.H., **F.C. Lin**, B. Schmandt, J. Farrell, R.B. Smith, and V.C. Tsai, The Yellowstone magmatic system from the mantle plume to the upper crust, *Science*, DOI:10.1126/science.aaa5648, 2015.
32. **Lin, F.C.**, M.D. Kohler, and D.S. Weeraratne, March 11, 2011 Tohoku tsunami wavefront mapping across offshore southern California, *JGR*, 120, 3350–3362. doi: 10.1002/2014JB011524, 2015.
31. Bowden, D.C., V.C. Tsai, **F.C. Lin**, Site Amplification, Attenuation and Scattering from Noise Correlation Amplitudes Across a Dense Array in Long Beach, *Geophys. Res. Lett.*, 42: 1360–1367. doi: 10.1002/2014GL062662, 2015.
30. Ball, J.S., A.F. Sheehan, J.C. Stachnik, **F.C. Lin**, J.A. Collins, A Joint Monte Carlo

Analysis of Seafloor Compliance, Rayleigh Wave Dispersion and Receiver Functions at Ocean Bottom Seismic Stations offshore New Zealand, *Geochem., Geophys., Geosys.*, 15, 5051–5068, doi:10.1002/2014GC005412, 2014.

29. **Lin, F.C.** and B. Schmandt, Upper crustal azimuthal anisotropy across the contiguous US determined by Rayleigh wave ellipticity, *Geophys. Res. Lett.*, 41, doi:10.1002/2014GL062362, 2014.
28. Schmandt, B. and **F.C. Lin**, P- and S-wave tomography of the mantle beneath the United States, *Geophys. Res. Lett.*, 41, doi:10.1002/2014GL061231, 2014.
27. Yu, H., B. Guo, S. Hanafy, **F.C. Lin**, G.T. Schuster, Direct detection of near-surface faults by migration of back-scattered surface waves. SEG Technical Program Expanded Abstracts 2014: pp. 2135-2139. doi: 10.1190/segam2014-0737.1, 2014.
26. **Lin, F.C.**, V.C. Tsai, and B. Schmandt, 3-D crustal structure of the western United States: application of Rayleigh-wave ellipticity extracted from noise cross-correlations, *Geophys. J. Int.*, doi: 10.1093/gji/ggu160, 2014.
25. Kao, H., Y. Behr, C. Currie, R. Hyndman, J. Townend, **F.-C. Lin**, M.H. Ritzwoller, S.-J. Shan, and J. He, Ambient seismic noise tomography of Canada and adjacent regions: Part I Crustal structures, *J. Geophys. Res.*, 118, 5865-5887, doi:10.1002/2013JB010535, 2013.
24. **Lin, F.C.** and V.C. Tsai, Seismic Interferometry with Antipodal Station Pairs, *Geophys. Res. Letts*, 40, doi:10.1002/grl.50907, 2013.
23. **Lin, F.C.**, D. Li, R. W. Clayton, and D. Hollis, High-resolution 3D shallow crustal structure in Long Beach, California: Application of ambient noise tomography on a dense seismic array, *Geophysics*, 78(4), Q45-Q56, doi:10.1190/geo2012-0453.1, 2013.
22. Savage, M.K., **F.C. Lin**, and J. Townend, Ambient noise cross-correlation observations of fundamental and higher-mode Rayleigh wave propagation governed by basement resonance, *Geophys. Res. Letts.*, 40, doi:10.1002/grl.50678, 2013.
21. **Lin, F.**, V.C. Tsai, B. Schmandt, Z. Duputel, and Z. Zhan, Extracting Seismic Core Phases with Array Interferometry, *Geophys. Res. Letts.*, 40, doi:10.1002/grl.50237, 2013.
20. Shen, W., M.H. Ritzwoller, V. Schulte-Pelkum, and **F. Lin**, Joint inversion of surface wave dispersion and receiver functions: A Bayesian Monte-Carlo approach, *Geophys. J. Int.*, 192(2), 807-836, doi: 10.1093/gji/ggs050, 2013.
19. **Lin, F.**, D. Li, R. W. Clayton, and D. Hollis, Interferometry with a dense 3D dataset, SEG 2012 Extended Abstract, 2012.
18. **Lin, F.**, B. Schmandt, and V.C. Tsai, Joint inversion of Rayleigh wave phase velocity and ellipticity using USArray: constraining velocity and density structure in the upper crust, *Geophys. Res. Letts.*, 39, L12303, doi:10.1029/2012GL052196, 2012.
17. **Lin, F.**, V. Tsai, and M.H. Ritzwoller, The local amplification of surface waves: A new observable to constrain elastic velocities, density, and anelastic attenuation, *J. Geophys. Res.*, 117, B06302, doi:10.1029/2012JB009208, 2012.

16. **Lin, F.** and M.H. Ritzwoller, Apparent anisotropy in inhomogeneous isotropic media, *Geophys. J. Int.*, doi: 10.1111/j.1365-246X.2011.05100.x, 2011.
15. Ritzwoller, M.H., **F. Lin**, and W. Shen, Ambient noise tomography with a large continental seismic array, *Compte Rendus Geoscience*, doi:10.1016/j.crte.2011.03.007, 2011.
14. **Lin, F.** and M.H. Ritzwoller, Helmholtz surface wave tomography for isotropic and azimuthally anisotropic structure, *Geophys. J. Int.*, 186, doi: 10.1111/j.1365-246X.2011.05070.x, 2011.
13. **Lin, F.**, M.H. Ritzwoller, and W. Shen, On the reliability of attenuation measurements from ambient noise crosscorrelations, *Geophys. Res. Letts.*, 38, L11303, doi:10.1029/2011GL047366, 2011.
12. **Lin, F.**, M.H. Ritzwoller, Y. Yang, M.P. Moschetti, and M.J. Fouch, Complex and variable crustal and uppermost mantle seismic anisotropy in the western United States, *Nature Geoscience*, 4, 55-61, doi:10.1038/ngeo1036, 2011.
11. Moschetti, M. P., M. H. Ritzwoller, **F. Lin**, and Y. Yang, Crustal shear wave velocity structure of the western United States inferred from ambient seismic noise and earthquake data, *J. Geophys. Res.*, 115, B10306, doi:10.1029/2010JB007448, 2010.
10. **Lin, F.** and M.H. Ritzwoller, Empirically determined finite frequency sensitivity kernels for surface waves, *Geophys. J. Int.*, 182, 923-932, doi: 10.1111/j.1365-246X.2010.04643.x, 2010.
9. Moschetti, M.P., M.H. Ritzwoller, **F. Lin**, and Y. Yang, Seismic evidence for widespread crustal deformation caused by extension in the western USA, *Nature*, 464, Number 7290, 885-889, 8 April 2010.
8. **Lin, F.**, M.H. Ritzwoller, and R. Snieder, Eikonal Tomography: Surface wave tomography by phase-front tracking across a regional broad-band seismic array, *Geophys. J. Int.*, doi: 10.1111/j.1365-246X.2009.04105.x, 2009.
7. Yang, Y., M. H. Ritzwoller, **F. Lin**, M. P. Moschetti, and N. M. Shapiro, Structure of the crust and uppermost mantle beneath the western United States revealed by ambient noise and earthquake tomography, *J. Geophys. Res.*, 113, B12310, doi:10.1029/2008JB005833, 2008.
6. **Lin, F.**, M.P. Moschetti, and M.H. Ritzwoller, Surface wave tomography of the western United States from ambient seismic noise: Rayleigh and Love wave phase velocity maps, *Geophys. J. Int.*, doi:10.1111/j.1365-246X.2008.03720.x, 2008.
5. **Lin, F.**, M.H. Ritzwoller, J. Townend, M. Savage, S. Bannister, Ambient noise Rayleigh wave tomography of New Zealand, *Geophys. J. Int.*, doi: 10.1111/j.1365-246X.2007.03414.x, 2007.
4. Bensen, G.D., M.H. Ritzwoller, M.P. Barmin, A.L. Levshin, **F. Lin**, M.P. Moschetti, N.M. Shapiro, and Y. Yang, Processing seismic ambient noise data to obtain reliable broad-band surface wave dispersion measurements, *Geophys. J. Int.*, 169, 1239-1260, doi: 10.1111/j.1365-246X.2007.03374.x, 2007.
3. **Lin, F.**, M. H. Ritzwoller, and N. M. Shapiro, Is ambient noise tomography across

ocean basins possible?, *Geophys. Res. Lett.*, 33, L14304, doi:10.1029/2006GL026610, 2006.

2. Yang, Y., **F. Lin** and G. Yang, A temperature control device for single molecule measurements using the AFM, *Rev. Sci. Instrum.*, 77, 063701(1-5), 2006.
1. C-L. Chyan, **F. Lin**, H. Peng, J-M. Yuan, C-H. Chang, S-H. Lin and G. Yang, Reversible Mechanical Unfolding of Single Ubiquitin Molecules , *Biophys. J.* 87, 3995-4006, 2004.