XINFENG LIANG

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Education

Ph.D., Physical Oceanography, Columbia University, New York, 2012

M.A., Physical Oceanography, Columbia University, New York, 2009

B.S., Marine Sciences, Ocean University of China, Qingdao, 2003

Professional Experience

2016– Present: Assistant Professor, University of South Florida, St Petersburg, FL

2012–2015: Postdoctoral Associate, MIT, Cambridge, MA

2007–2012: Research Assistant, Columbia University, New York, NY

2003–2007: Research Assistant, Ocean University of China, Qingdao, China

Research Interests

Roles of Ocean in the Climate System, Vertical Transport of Ocean Properties and Tracers, Influence of Mesoscale Eddies on Deep Ocean Processes, Ocean Mixing and the Associated Dynamical Processes, Ocean Current Measurement and Ocean State Estimation

Refereed Journal Articles

2017

Liang, X., M. Spall, and C. Wunsch, 2017: Global ocean vertical velocity from a dynamically consistent ocean state estimate. *J. Geophys. Res*, doi: 10.1002/2017JC012985

Liang, X., C. Piecuch, R. Ponte, G. Forget, C. Wunsch and P. Heimbach, 2017: Change of the global ocean vertical heat transport over 1993-2010. *J. Clim*, 30, 5319-5327, doi: 10.1175/JCLI-D-16-0569.1

Yang, Q., W. Zhao, **X. Liang**, J. Dong, J. Tian, 2017: Elevated mixing in the periphery of mesoscale eddies in the South China Sea, *J. Phys. Oceanogr*, 47, 895-907, doi: 10.1175/JPO-D-16-0256.1

2016

Liang, X., and L. Yu, 2016: Variations of the global net air–sea heat flux during the "Hiatus" period (2001–10). *J. Clim*, 29, 3647–3660, doi:10.1175/JCLI-D-15-0626.1.

Sun, H., Q. Yang, W. Zhao, **X. Liang** and J. Tian, 2016: Temporal variability of diapycnal mixing in the northern South China Sea. *J. Geophys. Res*, doi: 10.1002/2016JC012044

Yang, Q., W. Zhao, **X. Liang**, and J. Tian, 2016: Three-dimensional distribution of turbulent mixing in the South China Sea*. *J. Phys. Oceanogr*, 46, 769–788, doi:10.1175/JPO-D-14-0220.1.

2015

Liang, X., and C. Wunsch, 2015: Note on the redistribution and dissipation of tidal energy over mid-ocean ridges. *Tellus A*, 67, doi:10.3402/tellusa.v67.27385.

Zhang, Y., Z. Liu, Y. Zhao, J. Li, and **X. Liang**, 2015: Effect of surface mesoscale eddies on deep-sea currents and mixing in the northeastern South China Sea. *Deep Sea Res II*, 122, 6–14, doi:10.1016/j.dsr2.2015.07.007.

Liang, X., C. Wunsch, P. Heimbach, and G. Forget, 2015: Vertical redistribution of cceanic heat content. *J. Clim*, 28, 3821–3833, doi:10.1175/JCLI-D-14-00550.1.

Forget, G., D. Ferreira, and **X. Liang**, 2015: On the observability of turbulent transport rates by Argo: supporting evidence from an inversion experiment. *Ocean Sci*, 11, 839–853, doi:10.5194/os-11-839-2015.

Before 2015

Liang, X., 2014: Semidiurnal tidal currents in the deep ocean near the East Pacific Rise between 9° and 10° N. *J. Geophys. Res*, doi:10.1002/2013jc009522.

Yang, Q., J. Tian, W. Zhao, **X. Liang**, and L. Zhou, 2014: Observations of turbulence on the shelf and slope of northern South China Sea. *Deep Sea Res. I*, 87, 43–52, doi:10.1016/j.dsr.2014.02.006.

Zhang, Z., W. Zhao, J. Tian, and **X. Liang**, 2013: A mesoscale eddy pair southwest of Taiwan and its influence on deep circulation. *J. Geophys. Res*, 118, 6479–6494, doi:10.1002/2013JC008994.

Liang, X., and A. M. Thurnherr, 2012: Eddy-modulated internal waves and mixing on a midocean ridge. *J. Phys. Oceanogr*, 42, 1242–1248, doi:10.1175/JPO-D-11-0126.1.

Liang, X., and A. M. Thurnherr, 2011: Subinertial variability in the deep ocean near the East Pacific Rise between 9 and 10N. *Geophys. Res. Lett*, 38, doi:10.1029/2011GL046675.

Adams, D. K., D. J. J. McGillicuddy, L. Zamudio, A. M. Thurnherr, **X. Liang**, O. Rouxel, C. R. German, and L. S. Mullineaux, 2011: Surface-generated mesoscale eddies transport deep-sea products from hydrothermal vents. *Science*, 332, 580–583, doi:10.1126/science.1201066.

Tian, J., Q. X. Yang, **X. Liang**, L. L. Xie, D. X. Hu, F. Wang, and T. D. Qu, 2006: Observation of Luzon Strait transport. *Geophys. Res. Lett*, 33, doi: 10.1029/2006GL026272.

Liang, X., X. Q. Zhang, and J. Tian, 2005: Observation of internal tides and near-inertial motions in the upper 450 m layer of the northern South China Sea. *Chin. Sci. Bull*, 50, 2890–2895, doi:10.1360/982005-210.

Tian, J., L. Zhou, X. Q. Zhang, **X. Liang**, Q. Zheng, and W. Zhao, 2003: Estimates of M2 internal tide energy fluxes along the margin of Northwestern Pacific using TOPEX/POSEIDON altimeter data. *Geophys. Res. Lett*, 30, doi: 10.1029/2003GL018008.

Technical Reports (non-reviewed)

Rodriguez E., D. Chelton, D. Dukhovskoy, T. Farrar, M. M. Flexas, T. Kilpatrick, P. Klein, **X. Liang,** D. G. Long, N. Maximenko, D. Menemenlis, S. Morey, R. Samelson, A. F. Thompson, S-P. Xie, White paper to NASA: Air-Sea Exchange Drivers of Climate Variability, Ocean Circulation, and Weather: A Case for Coincident Observations of Ocean Surface Winds and Currents, 2017

Liang X., Lowered Acoustic Doppler Current Proler (LADCP). *In Cruise report: RRS James Clark Ross*, JR281, 2013.

Liang X., Lowered Acoustic Doppler Current Proler (LADCP). *In Cruise report: RRS James Cook*, JC069, 2012.

Liang X., A. Brearley. Vessel-mounted ADCP. *In Cruise report: RRS James Cook*, JC054, 2011.

Liang X., A. Thurnherr, Evaluating a High-Power Prototype of the Tele-dyne/RDI Workhorse ADCP, 2009.

Selected Presentations at Scientific Meetings

Liang, X., C. Liu, R. M. Ponte and C. G. Piecuch, Vertical Redistribution of Ocean Salt Content, *AGU Fall Meeting*, New Orleans, 2017

Liang, X, M. Spall and C. Wunsch, Global Ocean Vertical Velocities from ECCO v4, *ECCO Group Annual Meeting*, Pasadena, 2017

Liang, X., Influence of Mesoscale Eddies on the Deep Ocean Dynamics over the East Pacific Rise, *Ocean Surface Topography Science Team Meeting*, Miami, 2017

Liang, X., C. Wunsch, P. Heimbach, G. Forget, R. Ponte and C. Piecuch, Global ocean vertical heat flux and its bidecadal change, *CLIVAR Open Science Conference*, Qingdao, 2016

Liang, X., C. Wunsch, P. Heimbach, G. Forget, R. Ponte and C. Piecuch, Global ocean vertical heat flux and its bidecadal change, *Ocean Science Meeting*, New Orleans, 2016

Liang X., C. Wunsch, P. Heimbach and G. Forget, Vertical redistribution of oceanic heat content, *AGU Fall Meeting*, San Francisco, 2014

Liang X., C. Wunsch, Estimation of the global ocean vertical velocity, *Ocean Sciences Meeting*, Honolulu, HI, 2014

Liang X., C. Wunsch, Redistribution and dissipation of tidal energy over an idealized ridge, *Ocean Turbulence Conference*, Santa Fe, NM, 2013

Liang X., A. Thurnherr, Eddy modulation of internal tides over the East Pacific Rise near 10N, *AGU Fall Meeting*, San Francisco, CA, 2012

Liang X., A. Thurnherr, Eddy-modulated internal waves and mixing on a mid-ocean ridge, *Ocean Sciences Meeting*, Salt Lake City, UT, 2012

Liang X., A. Thurnherr et al, Subinertial variability in the deep ocean near the East Pacific Rise, *Ocean Sciences Meeting*, Portland, OR, 2010

Current Research Contracts and Grants

2017-2020 NSF/OCE: The Evaluation of Ocean Reanalyses in Their Determining Trends in Global Ocean Heat Content with a Novel Method (**Lead-PI**). Amount: $299k.

2017-2021 NOAA: Analysis of Kinetic Energy and Structure Functions from Along-track and Crossover Altimeter Data (**Co-I**; Lead-PI: Don Chambers). Amount: $600k.

2018-2020 GOMRI: Effects of Mesoscale Eddies on Three-Dimensional Oil Dispersion: Data Integration, Interpretation and Implications for Oil Spill Models **(Lead-PI),** Amount: $709K.

Pending Research Contracts and Grants

2018-2021 NASA/PO: Examining the Global Ocean Vertical Heat Transport with a Dynamically Consistent Ocean State Estimate **(Lead-PI),** Amount: $387k.

2018-2021 NASA/NIP: Using Satellite and Deep Ocean Measurements to Investigate the Influence of Mesoscale Eddies on Deep Ocean Internal Waves **(Lead-PI),** Amount: $236k.

Teaching Experience

Spring 2017 Introduction to Climate Change and Climate Variability, College of Marine Science, USF.

Fall 2017 Geophysical Fluid Dynamics, College of Marine Science, USF.

Student Supervision

2016-present, Chao Liu, PhD student (Major Supervisor)

2018-present, Yang Zhang, PhD student (Major Supervisor)