Jinbo Wang

Jet Propulsion Laboratory
M/S 300-329B, 4800 Oak Grove Drive, Pasadena, CA 91109
https://science.jpl.nasa.gov/people/JWang2/
https://orcid.org/0000-0001-5034-5566
https://www.researchgate.net/profile/Jinbo_Wang
Last updates: 4/21/2020

Education

MIT/WHOI Joint Program, Massachusetts, Ph.D. in Physical Oceanography **June, 2011**

MIT/WHOI Joint Program, Massachusetts, M.S. in Physical Oceanography **March, 2008**

Peking University, China, M.S. in Atmospheric Sciences **June, 2005**

Lanzhou University, China, B.S. in Meteorology **June, 2002**

Research Interests

- Satellite Oceanography, Geophysical fluid dynamics, geostrophic turbulence, meso- and submeso-scale dynamics

Research Experience

Scientist, Jet Propulsion Laboratory November, 2015 - present

Postdoc scholar, Scripps Institution of Oceanography January, 2013 – November, 2015

Postdoc investigator, Woods Hole Oceanographic Institution June, 2011 – December, 2012

Research Assistant, MIT/WHOI Joint Program September, 2005 – June, 2011

Research Assistant, Peking University September, 2002 – June, 2005

Referred Journal Articles

1. J. Wang, L-L Fu, B. Haines, and coauthors, 2020: On the SWOT ocean CalVal, (in prep)
2. Qiu B., S. Chen, P. Klein, H. Torres, **J. Wang**, L-L. Fu, D. Menemenlis, 2020: Reconstructing Upper Ocean Vertical Velocity Field from Sea Surface Height in the Presence of Unbalanced Motion, Journal of Physical Oceanography, doi:10.1175/JPO-D-19-0172.1
3. Mazloff, M., S. Gille, B. Cornulle, **J. Wang**, 2020: The Importance of Remote Forcing for Regional Modeling of Internal Waves, Journal of Geophysical Research: Oceans, doi:10.1029/2019JC015623
4. Li, Z., **J. Wang**, L.L. Fu, 2019; An Observing System Simulation Experiment for Ocean State Estimation to Assess the Performance of the SWOT Mission: Part 1—A Twin Experiment, Journal of Geophysical Research: Oceans, DOI: 10.1029/2018JC014869
5. F. d'Ovidio, A. Pascual, **J. Wang**, A. Doglioli, Z. Jing, S. Moreau, G. Gregori, S. Swart, S. Speich, F. Cyr, B. Legresy, Y. Chao, L. L. Fu, R. A. Morrow, 2019: Frontiers in fine scale in-situ studies: opportunities during the SWOT fast sampling phase, Frontiers, DOI: 10.3389/fmars.2019.00168
6. Rosemary M., L.L. Fu, F. Ardhuin, M. Benkiran, B. Chapron, E. Cosme, F. d'Ovidio, J. T. Farrar, S. T. Gille, G. Lapeyre, P.-Y. Le Traon, A. Pascual, A. Ponte, B. Qiu, N. Rascle, R. Samelson, C. Ubelmann, **J. Wang**, E. D. Zaron. 2019: Global observations of fine-scale ocean surface topography with the Surface Water and Ocean Topography (SWOT) Mission, Frontier, DOI:10.3389/fmars.2019.00232

7. Zhao, Z., **J. Wang**, D. Menemenlis, L. Fu, S. Chen, and B. Qiu, 2019: Decomposition of the Multimodal Multidirectional M2 Internal Tide Field. J. Atmos. Oceanic Technol.,36, 1157–1173, https://doi.org/10.1175/JTECH-D-19-0022.1

8. Torres H., P. Klein, L. Siegelman, C. Ubelmann, B. Qiu, S. Chen, D. Menemenlis, **J. Wang**, O. Vergara, 2019: Interactions between Balanced Motions and Internal Gravity Waves: Can we diagnose them from space? Doi: 10.1029/2019GL083675, GRL

9. **Wang, J.** Lee-Lueng Fu, H. S. Torres, S. Chen, B. Qiu, D. Menemenlis, 2019: On the spatial scales to be resolved by the surface water and ocean topography Ka-band Radar interferometer, J. Atmos. Oceanic Technol., doi:10.1175/JTECH-D-18-0119.1

10. **Wang, J**., Lee-Lueng Fu, 2019: On the long-wavelength validation of the SWOT KaRIn measurement, J. Atmos. Oceanic Technol, 10.1175/JTECH-D-18-0148.1

11. L. D. Talley, I. Rosso, I. Kamenkovich, M. E. Mazloff, J. Wang, E. Boss, A. R. Gray, K. S. Johnson, R. Key, S. C. Riser, N. L. Williams, and J.L. Sarmiento, 2019, Southern Ocean biogeochemical float deployment strategies, with example from the Greenwich Meridian line (GO-SHIP A12), Journal of Geophysical Research: Oceans, https://doi.org/10.1029/2018JC014059

12. Torres, H., P. Klein, D. Menemenlis, B. Qiu, Z. Su, **J. Wang**, S. Chen, Lee-Lueng Fu, 2018, Partitioning ocean motions into balanced motions and internal gravity waves from space, JGR, doi: 10.1029/2018JC014438

13. V. Tamsitt, R. P. Abernathey, M. R. Mazloff, **J. Wang**, and L. D. Talley, 2018: Transformation of deep water masses along Lagrangian upwelling pathways in the Southern Ocean, Journal of Geophysical Research: Oceans, 10.1002/2017JC013409.

14. Qiu, B., S. Chen, P. Klein, **J. Wang**, H. Torres, L.-L. Fu, and D. Menemenlis, 2018: Seasonality in Transition Scale from Balanced to Unbalanced Motions in the World Ocean. *J Phys Oceanogr*, doi:10.1175/JPO-D-17-0169.1.

15. Su, Z., **J. Wang**, P. Klein, A. F. Thompson, and D. Menemenlis, 2018: Ocean submesoscales as a key component of the global heat budget. Nature Communications, 9, 775, doi:10.1038/s41467-018-02983-w.

16. Tamsitt, V. and Coauthors, 2018: Spiraling pathways of global deep waters to the surface of the Southern Ocean. *Nat Commun*, **8**, 172, doi:10.1038/s41467-017-00197-0.

17. Sebille, E. van and Coauthors, 2018: Lagrangian ocean analysis: fundamentals and practices. *Ocean Model*, doi:10.1016/j.ocemod.2017.11.008.

18. **Wang, J.,** L.-L. Fu, B. Qiu, D. Menemenlis, J. T. Farrar, Y. Chao, A. Thompson, and M. Flexas, 2018: An observing system simulation experiment for the calibration and validation of the Surface Water and Ocean Topography sea surface height measurement using in-situ platforms. J. Atmos. Oceanic Technol., doi:10.1175/JTECH-D- 17-0076.1.

19. **Wang**, J., M. R. Mazloff, and S. T. Gille, 2016: The effect of the Kerguelen Plateau on the ocean circulation. doi:10.1175/jpo-d-15-0216.1.

20. LaCasce J., J. **Wang**, 2015: Estimating Subsurface Velocities from Surface Fields with Idealized Stratification. J Phys Oceanogr, 45, 2424–2435, doi:10.1175/JPO-D-14-0206.1.

21. Wang, T., Y. Du, W. Zhuang, J. **Wang** (2015), Connection of Sea Level Variability between Tropical Western Pacific and Southern Indian Ocean during Recent Two Decades. Science China-D.

22. Liu, L., Peng, S., **Wang**, J., & Huang, R. X. (2014). Retrieving density and velocity fields of the ocean's interior from surface data. Journal of Geophysical Research: Oceans, 119, 8512–8529, doi:10.1002/2014JC010221.

23. **Wang**, J., M. R. Mazloff, S. T. Gille (2014), Pathways of Agulhas Waters poleward of 29S, Journal of Geophysical Research - Oceans, doi:10.1002/2014JC010049
24. **Wang**, J., G. Flierl, J. LaCasce, J. McClean, A. Mahadevan (2013), Reconstructing the ocean's interior from surface data, J. Phys. Oceanogr., 43, 16111626, doi:10.1175/JPO-D-12-0204.1
25. **Wang**, J., M. Spall, G. Flierl, P. Malanotte-Rizzoli (2013), Nonlinear radiating instabilities of an eastern boundary current, J. Phys. Oceanogr., 43(7), 14391452, doi:10.1175/JPO-D-12-0174.1.
26. **Wang**, J., M. Spall, G. Flierl, P. Malanotte-Rizzoli (2012), A new mechanism for the generation of quasi-zonal jets in the ocean, Geophysical Research Letters, 39, L10601, doi:10.1029/2012GL051861
27. **Wang**, J., W.H. Qian, and X. Zhang (2007), Relationship between the tropical cyclone genesis over the Northwest Pacific and sea surface temperature anomalies. Progress in Natural Sciences, 17(11): 69-73.
28. **Wang**, J., and W.H. Qian (2005), Statistical analysis of tropical cyclone impact on the China mainland during the last half century. Chinese Journal of Geophysics, 48(5): 1069-1077.

Non-referred publications

- Gille S. and coauthors, 2018: Open Code Policy for NASA Space Science: A perspective from NASA-supported ocean modeling and ocean data analysis, white paper in response to "Call for White Papers: Best Practices for a Future Open Code Policy for NASA Space Science".
- Wang, J. L. Fu, B. Qiu, T. Farrar, D. Menemenlis (2016), An Observing System Simulation Experiment (OSSE) on the design of an in-situ observing system for the CalVal of SWOT SSH measurement, SWOT white paper, Jet Propulsion Laboratory, Caltech.
- Wang, J., M. Spall, J. Pedlosky, I. Kamenkovich (2014). On the generation of zonal jets by radiating instability and small-scale stochastic wind forcing, in *zonal jets* (edited by B. Galperin et al.), (book chapter).
- Wang, J., Instabilities of an Eastern Boundary Current with and without Large-scale Flow Influence, Ph.D. thesis, MIT/WHOI Joint Program in Physical Oceanography, 2011.
- Wang, J., On the warm bias along the South-West African Coast in coupled models: An oceanic perspective, M.S. thesis, MIT/WHOI Joint Program in Physical Oceanography, 2008.

Professional Services

Reviewer for Science, Journal of Physical Oceanography, Journal of Geophysical Research – Oceans, Ocean Dynamics, Marine Ecology Progress Series, Frontiers, Ocean Modeling, Scientific Reports, Acta Physica Sinica, Geoscience and Remote Sensing Letters, Pure and Applied Geophysics, Geoscience and Remote Sensing Letters

Member of the steering committee for the SWOT Adopt-A-Cross-Over international CLIVAR consortium.

Field/Teaching Experience

- SWOT prelaunch field campaign, mooring deployment near the SWOT California Current CalVal site, September, 2019
- Line-W cruise with chief scientist John Toole; did CTD watch, oxygen and salt sampling, mooring recovery and deployment, August, 2012

- Teaching assistant for the class "Environment and Development of Western China", 2003
- Participated the summer project "Weather and Climate of Southern Gansu Province" along the border of Gansu Province and Tibet Plateau, 2001

Honors and Awards

- Outstanding Student Paper Award, AGU Fall Meeting, San Francisco, CA, 2010
- Wusi scholarship, Peking University, 2003-2004
- Award for Excellent Social Contribution, Peking University, 2003-2004
- Guanghua Fellowship, Peking University, 2002-2003

Workshop/Meeting Participation

- Zhan S., J. Wang, P. Klein, A. F. Thompson, D. Menemenlis, L.L. Fu, Seasonality and intermittency of the ocean dynamics at scales smaller than 100km in the world ocean: A scientific challenge for SWOT, American Geophysical Union Fall meeting, San Francisco, December, 2016
- Wang J., L.L. Fu, SWOT Ocean CalVal, American Geophysical Union Fall meeting, San Francisco, December, 2016
- Wang J., L.L. Fu, SWOT Ocean CalVal, SWOT Science Team meeting, Pasadena, June, 2016.
- Wang J., Inferring 3D mesoscale eddy structure from surface fields, Caltech, April, 2016 (invited).
- Wang J., Simulating tracer spreading using particles - the development of an offline Lagrangian model (Octopus), Future Lagrangian Ocean Modelling workshop, Imperial College, London, September, 2015.
- Wang J., On the reconstruction of ocean dynamics from ocean surface data, JPL, March, 2014.
- Wang J., On the formation of the quasi-zonal striations in the ocean by radiating instabilities of an eastern boundary current, International Space Science Institute, Bern Switzerland, April 2013.
- Wang J., Two lectures about the vertical partition of the horizontal kinetic energy in the ocean, Workshop on the wind-driven circulation in the world ocean, Guangzhou, China, October 2012. (invited)
- Wang, J., Reconstructing the ocean's interior from surface data, WHOI, September 2012; UMASS-Dartmouth (invited), Oct. 2012;
- Wang, J., Radiating instabilities of an eastern boundary current and the formation of the zonal striations in the ocean, University of Rhode Island, April, 2012.
- Wang, J., Nonlinear radiating instabilities of an idealized eastern boundary current with and without large-scale flow influence, Princeton AOS/GFDL seminar, March, 2012. (invited)
- Wang, J., A. Mahadevan, Vertical velocities in an upper ocean front from a Lagrangian perspective, Poster Presentation at the Workshop in Montreal: "Balance, Boundaries and Mixing in the Climate System" September 28-30, 2011
- Wang, J., P. Malanotte-Rizzoli, M. Spall, Influence of a large scale circulation on an eastern boundary current, Poster Presentation at AGU Annual Fall Meeting, San Francisco, CA, December 12-17, 2010.

- Wang, J., P. Malanotte-Rizzoli, M. Spall, The influence of a large scale circulation on an eastern boundary current, Oral Presentation at International Meeting of Students in Physical Oceanography (IMSPO), University of Washington, Seattle, WA, September 22-24, 2010.
- Participant of the Workshop on Ocean Mesoscale Eddies, Met Office, Exeter, UK, 27-29 April 2009
- Participant of the 13th Annual CCSM Workshop, Breckenridge, CO, 17-19 June 2008.
- Wang, J., M. Jochum, and P. Malanotte-Rizzoli, An oceanic perspective on the coastal SST bias in climate models, Oral presentation at CGD, NCAR, June 16, 2008
- Wang, J., M. Jochum, and P. Malanotte-Rizzoli, An oceanic perspective on the coastal SST bias in climate models, Poster presentation at the AGU Ocean Sciences Meeting, Orlando, FL, 2-7 March, 2008.
- Wang, J., WH Qian, Comparison of different thermocline definitions over the tropical Pacific, Oral presentation at the conference ”The effects of ocean-atmosphere-land interaction in Asian monsoon region on China climate” Jinan, Shandong, China, Aug 2004.