

Peng Wang, Ph.D.

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Address: Department of Atmospheric and Oceanic Sciences,
University of California, Los Angeles, CA 90095, USA

Education

- 2016. Ph.D. in Meteorology and Physical Oceanography
University of Miami, Miami, Florida, USA
- 2011. B.S. in Marine Sciences
Ocean University of China, Qingdao, Shandong, China

Careers

- 2017 – Present. Postdoctoral Scholar, University of California, Los Angeles, USA
(Supervisor: James C. McWilliams)
- 2016 – 2017. Postdoctoral Research Associate, University of Miami, USA
(Supervisor: Tamay M. Özgökmen)

Research Interests

- Wave-current interaction
- Langmuir circulation and parametrization
- Mesoscale and submesoscale processes
- Nearshore ocean circulation

Professional Experiences

- 2014 – 2016. Teaching Assistant for grad course of *Geophysical Fluid Dynamics*
- 2016. Drifter deployments for measuring surface circulation in Florida Biscayne Bay
- 2014. Hydrological data collection in coastal ocean of South Florida
- 2013. Teaching Assistant for grad course of *Computer Models of Fluid Dynamics*
- 2013. Teaching Assistant for undergrad course of *Introduction to Physical Oceanography*
- 2012. Near real-time forecaster for drifter deployments in Gulf of Naples, Italy

Computer Skills

Fortran; MATLAB; Linux/Unix; Nek5000; ROMS; VisIt; GOTM; etc.

Awards and Honors

- 2011 – 2016. Scholarship for Doctoral Student at University of Miami, USA
- 2009 – 2010. Honor of Outstanding Student at Ocean University of China
- 2008 – 2010. Fellowship of Excellent Academy at Ocean University of China
- 2009. Second Prize of Mathematics Contest for National Undergraduate, Shandong, China
- 2008. First Prize of Marine Knowledges Contest for National Undergraduate, China

Reviewer Services

- U.S. National Science Foundation
- Geophysical Research Letters
- Journal of Ocean University of China

Social Services

- 2015. Volunteer for US National Gandhi Day of Service
- 2015. Volunteer for UM/RSMAS Fundraising Auction
- 2014. Volunteer for Miami Baynanza Beach Cleanup and Exotic Plant Removal
- 2013. Co-founder of UM/RSMAS Garden Club
- 2013 – 2014. Committee member of UM/RSMAS MPO Graduate Student Seminar

Professional Affiliations

American Geophysical Union (AGU)

Chinese-American Oceanic and Atmospheric Association (COAA)

Publications

In Progress:

- **Wang,P.**, McWilliams, J. C.. An Inner-Shelf Front Induced by Wave Streaming. *Nature Communications*, in preparation Apr. 2020.

- **Wang, P.**, McWilliams, J. C., Uchiyama, Y., and Chekroun, M.. Effects of Wave Streaming and Wave Variations on Nearshore Wave-driven Circulation. *Journal of Physical Oceanography*, in revision Apr. 2020.

Peer-reviewed Papers:

- Li, Q., et al. 2019. Comparing Ocean Surface Boundary Vertical Mixing Schemes Including Langmuir Turbulence. *Journal of Advances in Modeling Earth Systems*, DOI: <https://doi.org/10.1029/2019MS001810>.
- Brett, G., Pratt, L., Rypina, I., and **Wang, P.**, 2019. Competition between chaotic advection and diffusion: stirring and mixing in a 3D eddy model. *Nonlinear Process in Geophysics*, DOI: <https://doi.org/10.5194/npg-2018-54>.
- Zhai, L., Wang, X., **Wang, P.**, Zhang, B., Miralles-Wilhelm, F., Sternberg, L., 2019. Vegetation and location of water inflow affect evaporation in a subtropical wetland as indicated by the deuterium excess method. *Ecohydrology*, DOI: <https://doi.org/10.1002/eco.2082>
- **Wang, P.**, Özgökmen, T. M., 2018. Langmuir circulation with explicit surface waves from moving-mesh modelling. *Geophysical Research Letters*, DOI: <https://doi.org/10.1002/2017GL076009>.
- **Wang, P.**, Özgökmen, T. M., Haza, A. C., 2018. Material dispersion by oceanic internal waves. *Environmental Fluid Mechanics*, DOI:10.1007/s10652-016-9491-y.
- **Wang, P.**, Özgökmen, T. M., 2016. Spiral inertial waves radiated from geophysical vortices. *Ocean Modelling*, DOI: <https://doi.org/10.1016/j.ocemod.2016.01.001>.
- **Wang, P.**, Özgökmen, T. M., 2015. How do hydrodynamic instabilities affect 3D transport in geophysical vortices? *Ocean Modelling*, DOI: <https://doi.org/10.1016/j.ocemod.2015.01.002>.
- Rypina, I., Pratt, L. J., **Wang, P.**, Özgökmen, T. M., Mezić, I., 2015. Resonance phenomena in 3D time-dependent volume-preserving flows with symmetries. *Chaos*, DOI: <https://doi.org/10.1063/1.4916086>.
- Pratt, L. J., Rypina, I. I., Özgökmen, T. M., **Wang, P.**, Childs, H., Bebieva, Y., 2014. Chaotic advection in a steady, three-dimensional, Ekman-driven eddy. *Journal of Fluid Mechanics*, DOI: <https://doi.org/10.1017/jfm.2013.583>.

Conference Papers:

- Zambianchi, E., Poulain, P., **Wang, P.**, Kalampokis, A., Berta, M., Borghini, M., Buonocore, B., Cianelli, D., Falco, P., Gerin, R., Iermano, I., Mantovani, C., Nicolaides, G., Özgökmen, T., Sofianos, S., Uttieri, M., Zervakis, V., 2013. Surface circulation in the Gulf of Naples during the GELaTo 2012 experiment. *40th CIESM Congress – Marseille, France, October 2013*.

Ph.D. Dissertation:

- **Wang, P.**, 2016. Material dispersion by ocean eddies and waves. *Open Access Dissertations*, Paper 1653.

Conferences and Presentations

- Ocean Sciences Meeting
--- San Diego, California, USA; February 2020
Oral Presentation: “Effects of wave streaming and wave variations on nearshore wave-driven circulation”
- California GFD meeting at California Institute of Technology
--- Pasadena, California, USA; September 2019
Oral Presentation: “Effects of wave streaming and wave variations on nearshore wave-driven circulation”
- Visiting scholar at Institute of Oceanology, Chinese Academy of Sciences
--- Qingdao, Shandong, China; January 2019
Invited talk: “Wave-current interaction with application to Langmuir circulation”
- Visiting scholar at National University of Defense Technology
--- Changsha, Hunan, China; January 2019
Invited talk: “Wave-current interaction with application to Langmuir circulation”
- The Fourth Xiamen Symposium on Marine Environmental Sciences (XMAS-IV)
--- Xiamen, Fujian, China; January 2019
Oral Presentation: “Wave-current interaction with application to Langmuir circulation”
- Visiting scholar at Nanjing University of Information Science and Technology
--- Nanjing, Jiangsu, China; January 2019
Invited talk: “Wave-current interaction with application to Langmuir circulation”
- Visiting scholar at Ocean University of China
--- Qingdao, Shandong, China; December 2018
Invited talk: “Wave-current interaction with application to Langmuir circulation”

- Planetary Boundary Layers in Atmospheres, Oceans, and Ice on Earth and Moons

KITP, Santa Barbara, CA, USA; April – May 2018
- Sun Yat-sen University Forum of Ocean Sciences for International Young Scholars

Zhuhai, China; December 2017
Oral presentation: “Material transport inside Langmuir circulation and an unstable eddy”
- East China Normal University Forum of Ocean Sciences for Outstanding Overseas Young Scholars

Shanghai, China; June 2017
Oral presentation: “Material transport within unstable eddies and Langmuir circulation”
- Consortium for Advanced Research on Transport of Hydrocarbon in the Environment

Miami, FL, USA; November 2016
Oral presentation: “Simulating Langmuir circulations without phase averaging surface gravity waves”
- AmeriMech Symposium on Fluid Transport and Nonlinear Dynamics

Woods Hole, MA, USA; May 2016
Poster presentation: “Spiral inertial waves emitted from geophysical vortices”
- AGU Ocean Sciences Meeting

New Orleans, LA, USA; February 2016
Poster presentation: “Spiral inertial waves emitted from geophysical vortices”
- Dynamical Systems Theory and Lagrangian Data Assimilation in 3D+1 Geophysical Fluid Dynamics

La Jolla, CA, USA; September 2015
Oral presentation: “Spiral inertial waves emitted from geophysical vortices”
- Visiting scholar at École Polytechnique Université Paris-Saclay

France; September 2015
- American Geophysical Union Fall Meeting

San Francisco, CA, USA; December 2014
Poster presentation: “How do hydrodynamic instabilities affect 3D transport in geophysical vortices”
- Dynamical Systems Theory and Lagrangian Data Assimilation in 3D+1 Geophysical Fluid Dynamics

Miami, FL, USA; November 2014
Oral presentation: “The material transport and wave radiation in a 3D ocean eddy”
- Consortium for Advanced Research on Transport of Hydrocarbon in the Environment

Hollywood, FL, USA; April 2014
Oral presentation: “3D instability in an isolated geophysical vortex”

- Dynamical Systems Theory and Lagrangian Data Assimilation in 3D+1 Geophysical Fluid Dynamics

Chapel Hill, NC, USA; February 2013

Oral presentation: “Chaotic advection a periodically-perturbed, three-dimensional rotating cylinder”

- Lagrangian Analysis and Prediction of Coastal and Ocean Dynamics

Miami, FL, USA; June 2012