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
  (with Prof. James C. McWilliams)

- 2016 – 2017. Postdoctoral Research Associate, University of Miami, USA
  (with Prof. Tamay M. Özgökmen)

Research Interests

- Wave-current interaction
- Langmuir circulation
- Mesoscale and submesoscale currents
- Nearshore ocean circulation
- Geophysical fluid dynamics

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

Peer-reviewed Articles:

- 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. *Ecohydrolo*gy, 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., 2016. 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.

Submitted / Preparation:

- **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 Feb. 2020.

- **Wang,P.**, McWilliams, J. C.. An Inner-Shelf Front Induced by Wave Streaming. *Geophysical Research Letters*, in preparation Feb. 2020.

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