

Dr. Yiming Guo

Woods Hole Oceanographic Institution

Physical Oceanography (PO) and Marine Chemistry & Geochemistry (MC&G)

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EDUCATION

Ph.D. in Marine Science	2017-2022
North Carolina State University, Raleigh, NC, U.S.	
B.S. in Marine Science	2012-2016
Ocean University of China, Qingdao, China	

POSITIONS

Postdoctoral Investigator	2024.1-
Woods Hole Oceanographic Institution, Woods Hole, MA, U.S.	
Postdoctoral Associate	2022.11-2023.12
Yale University, New Haven, CT, U.S.	
Graduate Teaching & Research Assistant	2018-2022
North Carolina State University, Raleigh, NC, U.S.	
Graduate Research Fellow	2020.8-2020.12
National Center for Atmospheric Research, Boulder, CO, U.S.	
Visiting Student	2019.5
Graduate School of Oceanography, University of Rhode Island, RI, U.S.	
Research Assistant	2016-2017
Shanghai Ocean University, Shanghai, China	
Research Assistant	2016-2017
Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China	
Undergraduate Research Assistant	2014-2015
Ocean University of China, Qingdao, China	

RESEARCH INTERESTS

Ocean tracer transport and energy budget
Ocean mesoscale and submesoscale dynamics
Jet dynamics and air-sea interaction
Ocean carbon capture and storage

PUBLICATIONS

Guo, Y. and Timmermans, M-L., 2024. Global ocean $p\text{CO}_2$ variation regimes: spatial patterns and the emergence of a hybrid regime. *Journal of Geophysical Research: Oceans*, under review.

Guo, Y., 2024. Sea surface eddy salinity flux in satellite observations and climate simulations. *Journal of Geophysical Research: Oceans*, *In prep.*

Bishop, S., **Guo, Y.**, Parfitt, R., Nakamura, H., 2024. Baroclinic instability efficiency in the Kuroshio Extension between stable and unstable states. *Geophysical Research Letters*, *In prep.*

Guo, Y. and Timmermans, M-L., 2024. The role of ocean mesoscale variability in air-sea CO_2 exchange: a global perspective. *Geophysical Research Letters*, *Accepted.*

Cherian, D., **Guo, Y.**, Bryan, F., Shroyer, E., 2024. Assessing modelled mesoscale stirring using microscale observations. *Journal of Physical Oceanography* (2024).

Guo, Y., Bishop, S., Bryan, F., & Bachman, S., 2023. Mesoscale variability linked to interannual displacement of Gulf Stream. *Geophysical Research Letters*, 50, e2022GL102549.

Yang, Y., **Guo, Y.**, Zeng, L., and Wang, Q., 2023. Eddy-induced Sea surface salinity changes in the South China Sea. *Frontiers in Marine Science* 10:367.

Guo, Y., Bachman, S., Bryan, F., and Bishop, S., 2022. Increasing Trends in Oceanic Surface Poleward Eddy Heat Flux Observed Over the Past Three Decades. *Geophysical Research Letters*, 49(16), e2022GL099362.

Guo, Y., Bishop, S., Bryan, F. and Bachman, S., 2022. A global diagnosis of eddy potential energy budget in an eddy permitting ocean model. *Journal of Physical Oceanography*.

Guo, Y. and Bishop, S.P., 2022. Surface Divergent Eddy Heat Fluxes and Their Impacts on Mixed Layer Eddy-Mean Flow Interactions. *Journal of Advances in Modeling Earth Systems*, 14(4), p.e2021MS002863.

Bishop, S. P., **Y. Guo**, F.O. Bryan, & R.J. Small. 2020. The global sink of available potential energy by mesoscale air-sea interaction. *CLIVAR Exchanges*, 77 /*US CLIVAR Variations*, 18, 1; 13–16.

PRESENTATIONS

Talk: “Surface $p\text{CO}_2$ variation regimes in the global ocean and the role of mesoscale eddies.” 2024 Ocean Sciences Meeting, New Orleans, LA, February 2024.

Talk (invited): “Mesoscale transport and the eddy potential energy budget” WHOI Physical Oceanography Seminar, Woods Hole Oceanographic Institution, MA, October 2023. (Postponed to March 19, 2024)

Talk: “Mesoscale eddies: the weather of the ocean” Yale EPS Postdoc Seminar, Yale University, New Haven, CT, October 2023.

Poster: “Ocean pCO₂ variation regimes in the global surface ocean.” 2023 Yale Climate Day, New Haven, CT, U.S. May 2023. [Recipient of poster prize awards]

Talk: “Mesoscale air-sea interaction and the eddy potential energy budget, is it important?” 2022 Ocean Sciences Meeting, virtual. March 2022.

Talk: “Global role of mesoscale air-sea interaction on eddy energetics in high-resolution ocean and climate models” iHESP annual meeting, Texas A&M university, College Station, Texas, January 2022. (meeting cancelled)

Talk: “Eddy heat flux and eddy potential energy budget” Oceanography seminar, NCAR, Boulder, October 2021.

Talk (invited): “Mesoscale air-sea interaction and the eddy potential energy budget, is it important?” ATOC Colloquium, University of Colorado, Boulder, September 2021.

Talk: “Mid-latitude mesoscale air-sea interaction and the eddy potential energy budget” International Workshop for Mid-latitude Air-sea Interaction, Sapporo, Japan. June 2021. [Recipient of the Early career & Student Presentation Awards]

Talk: “Mesoscale air-sea interaction and the eddy potential energy budget, is it important?” CESM Ocean Model Working Group Meeting, Boulder, CO, U.S. February 2021.

Poster: “Interannual variability of observed surface divergent meridional eddy heat fluxes in the Kuroshio Extension and Gulf Stream.”

2020 Ocean Sciences Meeting, San Diego, CA, U.S. February 2020.

Talk: “Surface Divergent Meridional Eddy Heat Fluxes in the Gulf Stream.”

The Middle Atlantic Bight Physical Oceanography and Meteorology (MABPOM) Meeting, Raleigh, NC, U.S. October 2019.

Talk: “Long-term Estimate of Meridional Eddy Heat Transport in the Ocean Mixed Layer.” MEAS Graduate Student Seminar, North Carolina State University, Raleigh, NC, U.S. March 2019.

Poster: “Long-term Estimate of Meridional Eddy Heat Transport in the Ocean Mixed Layer.” CLIVAR workshop “Sources and Sinks of Ocean Mesoscale Eddy Energy”, Tallahassee, FL, U.S. March 2019.

AWARDS

Yale Climate Day, winner of the poster presentation competition, Yale Institute for Biospheric Studies, New Haven, CT, U.S. May 2023.

Physical Oceanography Dissertations Symposium (PODS) XII, Hawai’I, October 2022 (Invited participant, but declined due to schedule conflict).

NCAR Advanced Study Program Grad Fellowship, National Center for Atmospheric Research, Boulder, CO, U.S. August 2021-December 2021.

Early Career & Student Presentation Awards, International Workshop for Mid-latitude Air-sea Interaction, Sapporo, Japan. June 2021.

Provost’s Doctoral Fellowship, North Carolina State University, Raleigh, NC, U.S. 2017-2018.

University Graduate Fellowship supplement, North Carolina State University, Raleigh, NC, U.S. 2017-2018.

Outstanding Graduate, Shandong Province, China, 2016.

Student of the Year Award, Laurel Industrial Company, Inc & Ocean University of China, Qingdao, China. 2014.

“Challenge Cup” Entrepreneurship Competition-First Prize in OUC, Ocean University of China, Qingdao, China, 2014.

Scholarship for Excellent Academic Achievement, Ocean University of China, Qingdao, China. 2013, 2014, 2015.

Excellent Student Cadre, Ocean University of China, Qingdao, China. 2013, 2014.

WORKSHOPS & ACTIVITIES

NCAR CESM Tutorial Workshop, National Center for Atmospheric Research, Boulder, CO, U.S. August 2019.

ENVS Summer School, Hong Kong University of Science and Technology, Hong Kong, China, July 2016.

Administrative Assistant in President’s Office, Ocean University of China, Qingdao, China, 2015-2016.

National Undergraduate Training Programs for Innovation and Entrepreneurship, Ocean University of China, Qingdao, China, 2014-2016.

TEACHING EXPERIENCE

Teaching Assistant, Labs for Earth System Sciences, North Carolina State University, Raleigh, NC, U.S. 2018 Fall, 2019 Spring, 2019 Fall, 2020 Spring.

Lecturer, SAT math & AP Calculus, Qingdao SAT Center, Qingdao, China, 2017.

FIELDWORK

Jiaozhou Bay, Qingdao, China, R/V Yuanjian I, Coastal Observation Training, Ocean University of China, September 2015.

Jiaozhou Bay, Qingdao, China, R/V Tianshi I, Marine Investigation Training, Ocean University of China, May 2014.

PROFESSIONAL AFFILIATIONS

Reviewer for *Journal of Physical Oceanography* (2), *Journal of Climate* (1), *Climate Dynamics* (2), *Ocean Dynamics* (1), *Frontier in Marine Sciences*.

Member, American Geophysical Union.