

XIAOTING YANG

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APPOINTMENTS

Woods Hole Oceanographic Institution

Nov 2024 – present

Assistant Scientist

Department of Physical Oceanography

University of California, San Diego

July 2022 – Nov 2024

Post-doctoral Associate

Scripps Institution of Oceanography

EDUCATION

Harvard University

August 2016 - May 2022

PhD in Physical Oceanography

Department of Earth and Planetary Sciences

Peking University

September 2012 - July 2016

Bachelor in Atmospheric and Oceanic Sciences

School of Physics

PUBLICATIONS

- [1] Xiaoting Yang, Eli Tziperman, and Kevin Speer. Dynamics of Deep Ocean Eastern Boundary Currents. *Geophysical Research Letters*, 47(1):e2019GL085396, 2020. [pdf](#).
- [2] Xiaoting Yang, Eli Tziperman, and Kevin Speer. Deep Eastern Boundary Currents: Realistic Simulations and Vorticity Budgets. *Journal of Physical Oceanography*, 50(11):3077–3094, 2020. [pdf](#).
- [3] Madeline D Miller, Xiaoting Yang, and Eli Tziperman. Reconciling the Observed Mid-depth Exponential Ocean Stratification with Weak Interior Mixing and Southern Ocean Dynamics via Boundary-intensified Mixing. *The European Physical Journal Plus*, 135(4):375, 2020. [pdf](#).
- [4] Xiaoting Yang, Eli Tziperman, and Kevin Speer. Deep Eastern Boundary Currents: Idealized Models and Dynamics. *Journal of Physical Oceanography*, 2021. [pdf](#).
- [5] Xiaoting Yang and Eli Tziperman. South Atlantic Deep Eastern Boundary Current Driven by Agulhas Rings: an Idealized Study. *Ocean Modelling*, page 101817, 2021. [pdf](#).
- [6] Xiaoting Yang and Eli Tziperman. The Vertical Middepth Ocean Density Profile: an Interplay between Southern Ocean Dynamics and Interior Vertical Diffusivity. *Journal of Physical Oceanography*, 52(10):2479–2492, 2022. [pdf](#).
- [7] Xiaoting Yang and Paola Cessi. The Potential Role of Bering Strait in the Dynamics of Multi-decadal Variability in the North Atlantic: an Idealized Model Study. *Journal of Physical Oceanography*, 53(10):2353–2373, 2023. [pdf](#).
- [8] Xiaoting Yang and Paola Cessi. The Bering Strait Throughflow Component of the Global Mass, Heat and Freshwater Transport. *Journal of Geophysical Research: Oceans*, 129(10):e2024JC021463, 2024. [pdf](#).

- [9] Xiaoting Yang, Paola Cessi, and Bruno Blanke. Sources and paths of the lower branch of the abyssal overturning circulation. *Journal of Geophysical Research: Oceans*, 130(12):e2025JC023012, 2025.
- [10] Marisa Borreggine, Evelyn M Powell, Minmin Fu, Xiaoting Yang, Elle Weeks, Boer Zhang, Kendra Wilkinson, Jerry X Mitrovica, Christian Tryon, and Richard Meadow. Combining paleocurrents and sea level in a least-cost pathway model of human dispersal from sunda to sahal, 65–45,000 years ago. *Quaternary Science Reviews*, 381:109950, 2026.
- [11] Xiaoting Yang. The Effect of Enhanced Southern Hemisphere Westerlies on the Strength and Frequency of Atlantic Multidecadal Variability: an Idealized Study. submitted to Journal of Climate, 2026.
- [12] Xiaoting Yang and Lisan Yu. Wind Driven Near Surface Circulation and Heat Transport Changes in the Equatorial Oceans. in preparation, 2026.
- [13] Xiaoting Yang, Eli Tziperman, and Kevin Speer. The Source and Paths of Drake Passage Deep Water Masses: Effects of Mean Flow versus Eddies. in preparation, 2026.
- [14] Xiaoting Yang and Eli Tziperman. Eddy Driving of the Deep Ocean Eastern Boundary Current Outflows into the Southern Ocean. in preparation, 2026.

CONFERENCES AND MEETINGS

- Xiaoting Yang, Madeline Miller and Eli Tziperman, *Reconciling Weak Interior Mixing and Abyssal Recipes via Concentrated Boundary Mixing*, AGU 2016.
- Xiaoting Yang, Eli Tziperman and Kevin Speer, *The Deep Eastern Boundary Current in Southeastern Pacific Ocean*, Ocean Science Meeting 2018.
- Xiaoting Yang, Eli Tziperman and Kevin Speer, *Dynamics of Deep Eastern Boundary Currents*, AGU 2018.
- Xiaoting Yang, Eli Tziperman and Kevin Speer, *Dynamics of Deep Eastern Boundary Currents*, AOFD 2019.
- Xiaoting Yang, Eli Tziperman and Kevin Speer, *The Dynamics of Deep Ocean Eastern Boundary Currents*, Ocean Science Meeting, 2020.
- Xiaoting Yang, Eli Tziperman and Kevin Speer, *Dynamics of Deep Ocean Eastern Boundary Current*, AGU 2020.
- Pengcheng Zhang, Xiaoting Yang, John Wallace and Eli Tziperman, *New Insights into Dynamics of Coastal Low-level Jets*, AGU 2020.
- Xiaoting Yang, Eli Tziperman and Kevin Speer, *Deep Eastern Boundary Outflow into the Southern Ocean: an Important Eddy-driven Component of the MOC*, AGU 2021.
- Xiaoting Yang, Eli Tziperman and Kevin Speer, *Deep Eastern Boundary Outflow into the Southern Ocean: an Important Eddy-driven Component of the MOC*, Ocean Science Meeting, 2022
- Xiaoting Yang and Paola Cessi, *Lagrangian Analysis of the Origin and Fate of Bering Strait Transport in ECCO version 4*, WCRP Workshop on Improving Climate Models and Projections Using Observation, MIT, 2023.
- Xiaoting Yang and Paola Cessi, *Lagrangian Analysis of the Origin and Fate of Bering Strait Transport in ECCO version 4*, CalGFD, Scripps Institution of Oceanography, UCSD, 2023.
- Xiaoting Yang and Paola Cessi, *Lagrangian Analysis of the Origin and Fate of Bering Strait Transport in ECCO version 4*, Ocean Science Meeting, 2024.
- Xiaoting Yang, Paola Cessi and Bruno Blanke, *Sources and Paths of the Lower Branch of the Abyssal Overturning Circulation.*, AGU, 2025.

TEACHING EXPERIENCE

- Teaching Assistant for Applied Linear Algebra and Big Data (Applied Math, AM120, undergraduate level), 2018 Spring, 2019 Spring, and 2022 Spring.
- Teaching Assistant for Mysteries of Climate Dynamics (Earth and Planetary Sciences, EPS138, undergraduate level), 2018 Fall and 2019 Fall.
- Teaching Assistant for Physical Oceanography (EPS131, undergraduate level), 2020 Spring.
- Teaching Assistant for Climate Dynamics (EPS231, graduate level), 2021 Spring.
- Teaching Assistant for the Undergraduate Python and Climate Dynamics Camp, Department of Earth and Planetary Sciences, Harvard University, 2020 and 2021.

PROFESSIONAL SERVICE

- Journal reviewer: Journal of Climate (3 manuscripts) & Journal of Physical Oceanography (2) & Journal of Geophysical Research: Oceans (1) & EGUsphere (1) & Nature Climate Change (1).
- Reviewer: American Geophysical Union First-Time Presenter Feedback Program.
- Reviewer: National Science Foundation (Physical Oceanography Panel).
- Judge: National Collegiate Research Conference (NCRC), 2020 and 2021.
- Mentor: the Two-Buddy program for pre-qualification graduate student assistance in the Department of Earth and Planetary Sciences, Harvard University, 2018 to 2020.
- Co-author: “Sea level” Chapter of Book “Global Warming Science: a Qualitative Introduction of Climate Change and its Consequences” (E. Tziperman, 2022).

SUMMER SCHOOLS AND WORKSHOPS

- Rossbypalooza Summer School, Department of Geophysical Sciences, University of Chicago, 2018
- WCRP workshop on Improving models and projections using observation, MIT, 2023
- CalGFD workshop, Scripps Institution of Oceanography, UCSD, 2023

SELECTED PROJECTS (PAST AND ON-GOING)

- Dynamic of Deep Eastern Boundary Currents and Their Role in the Global Meridional Overturning Circulation.
- The Mechanism Behind the Deep Ocean Stratification: the Collaborating and Competing Effects of Southern Ocean Winds and Ocean Interior Mixing.
- Bering Strait Throughflow: its Global-scale Dynamics and Contribution to Heat and Freshwater Transports in the Meridional Overturning Circulation.
- Where are the Origin and Paths of the Abyssal Overturning Circulation?
- Bathymetric Control on the Paths of the Mid-depth Southward Branch of the Meridional Overturning Circulation in the Southern Hemisphere.
- The Interhemispheric Connection and Modulation of Atlantic Meridional Overturning Variability on Seasonal and Interannual Time Scales.
- The Effect of Strengthened Southern Hemisphere Westerlies on North Atlantic Multidecadal Variability: an Idealized Study.

- The Spreading Paths and Distribution of Greenland and Antarctica Melt Water and Their Potential Effects on Satellite Gravity Observations.
- The Response of Near-surface Ocean Circulation and Heat Transport to Long-term Wind Changes in Satellite Datasets.

SELECTED AWARDS

- Distinction in Teaching, Bok Center, Harvard University, 2018 and 2020.
- Teaching Award of Department of Earth and Planetary Sciences, 2018.
- Weiming Undergraduate Physicist Scholarship, Peking University, 2015.
- Silver Prize, Physics Olympics Competition, China Final, 2011 (high school).
- No.2 in Physics Olympics Competition, Chongqing, China, 2011 (high school).