

## Yilang Xu

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### **EDUCATION**

**MIT-WHOI Joint Program** (June 2018 – Present)

Ph.D. Candidate in Civil and Environmental Engineering at Massachusetts Institute of Technology and Applied Ocean Science and Engineering at Woods Hole Oceanographic Institution

**Stanford University** (September 2016 – April 2018)

Master of Science in Civil and Environmental Engineering

**Zhejiang University, China** (September 2012 – June 2016)

Bachelor of Engineering in Water Resources and Ocean Engineering

### **PROFESSIONAL EXPERIENCE**

**Graduate Research Assistant, Woods Hole Oceanographic Institution** (June 2018 – Present)

Advisor: Dr. Weifeng (Gordon) Zhang

Thesis Project: Exploring Mixing and Stratification in Antarctic Coastal Polynyas

**Graduate Researcher, Stanford University** (June 2017 – March 2018)

Advisor: Prof. Jenny Suckale

Research Project: CFD Modeling of Tsunami-Induced Inundations and Risk Mitigation with Coastal Construction

**Undergraduate Researcher, Zhejiang University** (November 2015 – June 2016)

Advisor: Prof. Wei Li

Thesis Project: Analytical Study of Tidal Wave Movement Based on Water-Sediment Interaction

### **RESEARCH INTERESTS**

Coastal Physical Oceanography, Numerical Ocean Modeling, Gravity Currents, Biological and Physical Interactions, Polynya Circulation, Sea Ice Dynamics, Antarctic Coastal Environment

## **PUBLICATIONS**

- (Preprint, accepted in JGR: Oceans in Feb 2024) **Xu, Y.**, Zhang, W. G., Maksym, T., Ji, R., Li, Y., & Walker, C. (2023). Influence of Physical Factors on Restratification of the Upper Water Column in Antarctic Coastal Polynyas. *ESS Open Archive*, December 05, 2023. <https://doi.org/10.22541/au.170179733.36188381/v1>
- Xu, Y.**, Zhang, W. G., Maksym, T., Ji, R., & Li, Y. (2023). Stratification Breakdown in Antarctic Coastal Polynyas. Part I: Influence of Physical Factors on the Destratification Time Scale. *Journal of Physical Oceanography*, 53 (9), 2047–2067. <https://doi.org/10.1175/JPO-D-22-0218.1>
- Xu, Y.**, Zhang, W. G., Maksym, T., Ji, R., & Li, Y. (2023). Stratification Breakdown in Antarctic Coastal Polynyas. Part II: Influence of an Ice Tongue and Coastline Geometry. *Journal of Physical Oceanography*, 53 (9), 2069–2088. <https://doi.org/10.1175/JPO-D-22-0219.1>

## **PRESENTATIONS**

- “Exploring Mixing and Stratification in Antarctic Coastal Polynyas”, *Parsons Laboratory Seminar Series*, March 8, 2024, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology, Cambridge, MA. (Talk)
- “Influence of Physical Factors on Restratification of the Upper Water Column in Antarctic Coastal Polynyas”, *Ocean Sciences Meeting 2024*, February 18–23, 2024, New Orleans, LA. (Talk)
- “Influence of Physical Factors on Springtime Water-Column Restratification in Antarctic Coastal Polynyas”, *Gordon Research Conference on Coastal Ocean Dynamics*, June 18–23, 2023, Bryant University, Smithfield, RI. (Poster)
- “Stratification Breakdown in Antarctic Coastal Polynyas”, *Applied Ocean Physics and Engineering Department Seminar*, April 26, 2023, Woods Hole Oceanographic Institution, Woods Hole, MA. (Talk)
- “Stratification Breakdown in Antarctic Coastal Polynyas: Influence of an Ice Tongue and Coastline Geometry”, *Gordon Research Conference on Polar Marine Science*, March 5–10, 2023, Ventura, CA. (Poster)
- “Influence of Physical Factors on the Stratification Breakdown and Dense Shelf Water Formation in Antarctic Coastal Polynyas”, *The SCAR Open Science Conference 2022*, August 1–10, 2022. (Online Talk)
- “Timescales of Wintertime Water-Column Destratification in Antarctic Coastal Polynyas”, *Ocean Sciences Meeting 2022*, February 24 – March 4, 2022. (Online Talk)
- “Timescales of Stratification Breakdown in Antarctic Coastal Polynyas”, *Antarctic Sea Ice and Southern Ocean Seminars*, November 18, 2020, Snow and Ice Geophysics Laboratory, University of Texas at San Antonio, San Antonio, TX. (Online Talk)
- “Numerical Modeling of Antarctic Coastal Polynya Circulation”, *Gordon Research Conference on Coastal Ocean Dynamics*, June 16–21, 2019, Southern New Hampshire University, Manchester, NH. (Poster)

## **WORKSHOPS**

- The 16th International Workshop on Multi-Scale (Un)-Structured Mesh Numerical Modeling for Coastal, Shelf, and Global Ocean Dynamics (IMUM 2017), August 29 – September 1, 2017, Stanford University, Stanford, CA.
- FUNWAVE-TVD Training Workshop, July 25–27, 2017, University of Delaware, Newark, DE.

## **RESEARCH CRUISES**

R/V Thomas G. Thompson, TN368, Shelfbreak Productivity Interdisciplinary Research Operation at the Pioneer Array (SPIROPA) Project Cruise, July 5–18, 2019.

SSV Corwith Cramer, MIT-WHOI Joint Program Orientation Cruise, June 29 – July 6, 2018.

## **AWARDS AND HONORS**

Excellent Graduate of Zhejiang University and of Zhejiang Province, 2016

Outstanding Undergraduate Thesis, Zhejiang University, 2016

National Scholarship (Top 5%), Ministry of Education of the People's Republic of China, 2015

The First Prize of Excellent Undergraduate Scholarship, Zhejiang University, 2014 and 2015