

# Yixi ZHENG

Centre for Ocean and Atmospheric Sciences School of Environmental Sciences  
University of East Anglia, Norwich, Norwich, NR4 7TJ

## EDUCATION & APPOINTMENTS

	<b>University of East Anglia</b> , Norwich, UK
Sep 2022 - present	Postdoctoral Researcher
Oct 2018 - Sep 2022	PhD in PHYSICAL OCEANOGRAPHY
	Thesis title: <i>The Interaction between Ocean, Ice Shelves and Sea Ice in the Southern Amundsen Sea</i>
Sep 2016 - Jun 2018	BSc in METEOROLOGY AND OCEANOGRAPHY (with first-class honours)
	<b>Ocean University of China</b> , Qingdao, China
Sep 2013 - Jul 2018	BSc in PHYSICAL OCEANOGRAPHY (major)
	BSc in ATMOSPHERIC SCIENCE (minor)

## SKILLS

Frequent participation in **cruises**, with experiences in using **VMP**, **gliders** and **ADCPs**

*RRS Sir David Attenborough* to the Weddell Sea, Jan - Mar 2024

*RV Nathaniel B. Palmer* to the Amundsen Sea, Jan - Mar 2022

*RV Nathaniel B. Palmer* to the Amundsen Sea, Jan - Mar 2019

Excellent analytical skills with **observations** from various platforms, e.g. CTD, ADCP, gliders, AUVs, satellites, tagged-seals

Extensive experiences in working with **idealised models** based on *MITgcm* and *PWP*

Strong backgrounds in **mathematics**, **fluid dynamics** and extensive experiences in **laboratory fluid dynamics experiments** (>100 hrs)

Excellent **MATLAB** & **FORTRAN** programming skills

Extensive experiences in **research collaboration** and **working in a multi-disciplinary team**

Involved in the **International Thwaites Glacier Collaboration (ITGC)** and actively collaborated with researchers in different institutes

Trained for using different **ocean gliders** and **Hugin AUV**

Participated in glider training courses at the University of East Anglia (2018, 2021) and **Plataforma Oceánica de Canarias** (2019)

Participated in **Eurofleets+ Hugin AUV-related training** in Gothenburg, 2019

Extensive experience in **science communication** and **talking to the media and the public**

Attended and presented at international conferences regularly

Gave interviews for **BBC Sounds** *Tracking the Planet*, BBC radio 4, **CNN**, **the Times**, **The Conversation**, & **La Repubblica** etc.

Invited by *Pint of Science 2019* to give a public talk: *The Melting Antarctica and Hardworking Seals*

## PUBLICATIONS & MANUSCRIPT IN PREPARATION

1. Segabinazzi Dotto, T., Sheehan, P.M.F., **Zheng, Y.**, Hall, R.A., Damerell, G.M., Heywood, K.J., **Mixing Processes in the Dotson Ice Shelf Outflow, Antarctica**, In preparation.
2. Damerell, G.M., Sheehan, P.M.F., Hall, R.A., **Zheng, Y.**, Heywood, K.J., Segabinazzi Dotto, T., **Microstructure observations in front of the Dotson Ice Shelf**, In preparation.
3. **Zheng, Y.**, Webber, B.G., Heywood, K.J., Stevens, D.P. & Stammerjohn, S.E., **Upper-ocean Processes in the Amundsen Sea Polynya in Austral Autumn**, In review in *Journal of Physical Oceanography*.
4. Wåhlin, A., Alley, K.E., Begeman, C., Hegrenæs, Ø., Yuan, X., Graham, A.G.C., Hogan, K., Davis, P.E.D., Dotto, T. S., Eayrs, C., Hall, R.A., Holland, D., Kim, T.W., Larter, R.D., Ling, L., Muto, A., Pettit, E.C., Schmidt, B.E., Snow, T., Stedt, F., Washam, P. M., Wahlgren, S., Wild, C., Wellner, J., **Zheng, Y.**, Heywood, K.J., **Swirls and Scoops: New Insights into How the Ocean Melts Antarctica's Ice Shelves**, In review in *Science Advances*.
5. Pickup, D., Heywood, K.J., Bakker, D.C.E., Hammermeister, E., Loucaides, S., **Zheng, Y.**, Lee, G.A., Yager, P.L., and Hall, R.A., **High resolution pH measurements at the edge of the Dotson Ice shelf using state-of-the-art autonomous technologies**, In preparation.
6. Karam, S., Heuzé, C., Müller, V., & **Zheng, Y.**, **Recirculation of Canada Basin Deep Water in the Amundsen Basin, Arctic**, *Journal of Physical Oceanography* (2023), <https://doi.org/10.1175/JPO-D-22-0252.1>
7. Savidge, E., Snow, T., Siegfried, M.R., **Zheng, Y.**, Villas Bôas, A.B., Bortolotto, G.A., Boehme, L. & Alley, K.E., **Wintertime Polynya Structure and Variability at Pine Island Glacier, West Antarctica, from Thermal Remote Sensing and Seal-borne Observation**, *IEEE Transactions on Geoscience and Remote Sensing* (2022), <https://doi.org/10.1109/TGRS.2023.3271453>

8. Dotto, T.S., Heywood, K.J., Hall, R.A., Scambos, T.A., **Zheng, Y.**, Nakayama, Y., Snow, T., Wåhlin, A.K., Wild, C., Truffer, M., & Pettit, E., *Interannual Meltwater Variability beneath Thwaites Ice Shelf, West Antarctica, Driven by Atmospheric Forcing* (2022), <https://doi.org/10.1038/s41467-022-35499-5>
9. **Zheng, Y.**, Stevens, D.P., Heywood, K.J., Webber, B.G. & Queste, B.Y., *Reversal of Ocean Gyres Near Ice Shelves in the Amundsen Sea Caused by the Interaction of Sea Ice and Wind*, *the Cryosphere* (2022), <https://doi.org/10.5194/tc-16-3005-2022>
10. Yoon, S.T., Lee, W.S., Nam, S.H., Lee, C.K., Yun, S, Heywood, K.J., Boehme, L., **Zheng, Y.**, Lee, I.H., Choi, Y., Jenkins, A., Jin, E.K., Larter, R.D., Wellner, J.S., Dutrieux, P. & Bradley, A.T., *Ice Front Retreat Reconfigures Meltwater-driven Gyres Modulating Ocean Heat Delivery to An Antarctic Ice Shelf*, *Nature Communications* (2021), <https://doi.org/10.1038/s41467-022-27968-8>
11. **Zheng, Y.**, Heywood, K.J., Webber, B.G., Stevens, D.P., Biddle, L.C., Boehme, L. & Loose, B., *Winter Distribution of Meltwater in Front of Pine Island Ice Shelf Revealed by Seals*, *Communications: Earth and Environment* (2021), <https://doi.org/10.1038/s43247-021-00111-z>

## PROFESSIONAL SERVICES

**Session co-convenor** for *European Geoscience Union Assamble 2024, Antarctic Ice-Ocean-Climate Interaction and Ice Sheet Evolution Past, Present, and Future* (expected, Apr 2024)

**Reviewer** for *Advances in Polar Science* (2021), *Journal of Geophysical Research: Oceans* (2021, 2023) & *Ocean Science* (2022)

**Member of FRISP Steering Committee** Sep 2023 - present

**Member of Science Steering Committee** for ITGC Early-Career Retreat, Apr 2019 - Sep 2019

Planned agenda, invited speakers and arranged activities with other members

Presented outcomes to ITGC Annual Science Meeting as the early-career representative

## SELECTED CONFERENCES & PRESENTATIONS

(Expected) May 2024, NASA GISS Sea Level Rise Seminar: (**invited seminar**) *The interactions between ocean, ice shelves and sea ice in the Amundsen Sea*, online.

Apr 2024, European Geosciences Union (EGU) General Assembly: (talk) *Heat and meltwater fluxes in front of Dotson Ice Shelf*, Vienne.

Jul 2023, The International Union of Geodesy and Geophysics (IUGG): (talk) *Temporal Variability of Meltwater in front of Dotson Ice Shelf, Revealed by Gliders*, Berlin, Germany.

Jun 2023, Forum for Research into Ice Shelf Processes (FRISP) Conference: (talk) *Temporal Variability of Meltwater in front of Dotson Ice Shelf, Revealed by Gliders*, Bergen, Norway.

May 2023, Department of Marine Science, University of Gothenburg (**invited seminar**) *Interactions between Ocean, Ice Shelves and Sea Ice in the Southeastern Amundsen Sea*, Gothenburg, Sweden.

Jan 2023, Woods Hole Oceanographic Institution (Applied Ocean Physics & Engineering): (**invited seminar**) *Interactions between Ocean, Ice Shelves and Sea Ice in the Southeastern Amundsen Sea*, online.

Nov 2022, National Institute of Water and Atmospheric Research: (**invited seminar**) *Glider Adventure in the Amundsen Sea, and more*, online.

Oct 2022, Physical Oceanography Dissertation Symposium 2022 (PODS XII): (**invited seminar**) *Interactions Between Ice Shelves, Ocean and Sea Ice in the Southeastern Amundsen Sea*, Kailuo-Kona, HI.

Sep 2022, Underwater Glider User Group (UG2): (talk) *Multi-disciplinary glider mission in the Amundsen Sea, Antarctica*, Seattle, WA.

Sep 2022, Challenger Society Conference: (talk) *Upper-ocean Cooling & Salinification in the Amundsen Sea Polynya in Austral Autumn*, Norwich, UK.

Jun 2022, ITGC Annual Science Meeting: (poster) *2022 Glider Adventure in the Amundsen Sea*, Boulder, CO, US.

Nov 2022, Centre for Ocean and Atmospheric Sciences, University of East Anglia: (**invited seminar**) *The meltwater pathway and local gyre circulation near ice shelves in the Amundsen Sea, Antarctica*, Norwich, UK.

Oct 2021, International Bio-logging Symposium: (recorded talk) *Seal-based Winter Observations Reveal Glacial Meltwater Surfacing in the South-eastern Amundsen Sea*, online.

Sep 2020, Ocean Modelling Group Meeting: (talk) *An Idealised Model of Gyres near Pine Island Ice Shelf and Thwaites Ice Shelf*, online.

Feb 2020, Ocean Sciences Meeting: (poster) *Pathways of Glacial Meltwater in Front of Pine Island Ice Shelf Revealed by Seals*, San Diego, CA, US.

Sep 2019, Forum for Research into Ice Shelf Processes (FRISP) Conference: (talk) *Winter Distribution of Meltwater in Front of Pine Island Ice Shelf Revealed by Seals*, Oxford, UK

## AWARDS & HONOURS

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*The International Association of Cryospheric Sciences (IACS) Early Career Scientist Prize (€1000)*, **IACS**, 2023

*The International Union of Geodesy and Geophysics (IUGG) Travel Grant (€500)*, **The International Union of Geodesy and Geophysics**, 2023

*Challenger Society International Travel Awards (£500)*, **Challenger Society for Marine Science**, 2020

4-year scholarship for Chinese citizens to study abroad, **China State Scholarship Fund (£14,400/year)** & **University of East Anglia (tuition-fee waiver)**, 2018

*Alan Preston Prize for the best project in oceanography*, **University of East Anglia**, 2018

*Outstanding Undergraduate Project*, **Ocean University of China**, 2018

*National Undergraduate Innovation Fellowship (~£2,000)*, **Ministry of Education of China**, 2017

*National Undergraduate Innovation Fellowship (~£2,000)*, **Ministry of Education of China**, 2016

*Scholarship for Outstanding Students*, **Ocean University of China**, 2016

*Outstanding Volunteer Award*, **Ocean University of China**, 2015

## TEACHING EXPERIENCE

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UNIVERSITY OF EAST ANGLIA

### Lecturer and Instructor

INTRODUCTION OF MATLAB FOR SCIENTISTS PART I & II, Nov 2019, 2020 & 2021

6-hr training for PhD students at the Faculty of Science

Designed and gave lectures in basic **MATLAB skills** with another PhD student

### Teaching Assistant

MODELLING ENVIRONMENTAL PROCESSES, Fall & Winter 2019, 2020 & 2021

Master or upper-level undergraduate course at the School of Environmental Sciences

Helped with students' projects on **mathematics** and **numerical modelling** using MATLAB

MATHEMATICS FOR SCIENTISTS A, Fall & Winter 2019 & 2020, Spring & Summer 2021

Undergraduate mathematical course at the Faculty of Science

Helped students with questions about **mathematics**

OCEAN CIRCULATION, Fall & Winter 2019

Undergraduate course at the School of Environmental Sciences

Helped students with questions about **physical oceanography**

ATMOSPHERE & OCEAN, Spring & Summer 2019

Undergraduate course at the School of Environmental Sciences

Helped students with questions about **physical oceanography**