

Dr. Jingwei Zhang

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Curriculum Vitae and Research Interests

I am an oceanographer with a PhD in Physical Oceanography from the University of Tasmania (UTAS) and the Commonwealth Scientific and Industrial Research Organization (CSIRO) in Hobart, Tasmania. My work uses numerical models (ocean and sea ice), observations, and theory to understand the interactions between Antarctica, sea ice, and ocean and their roles in our changing climate. These experiences fuel my strong ambition to advance the understanding of cryosphere-ocean interactions and their implications for future sea level and global climate systems.

◆ Physical Oceanography ◆ Southern Ocean dynamics ◆ Sea ice-Ocean modelling ◆ Antarctic meltwater ◆ Climate variability ◆ Climate model coupling ◆ Polar and climate science ◆ Tidal modelling

Qualifications

2020 - 2024 **Ph.D. Physical Oceanography and Antarctic Science**

Title: The response of Southern Ocean to recent changes in freshwater fluxes

CSIRO and the University of Tasmania, Hobart, AUSTRALIA

Supervisor: Dr. X. ZHANG, Prof. M. KING

2017 - 2019 **B.Sc. Physical Oceanography and Antarctic Science**, University of Tasmania

Title: Sea Level Trends and Variability in the China Marginal Seas

2+2 Bachelor joint program

First Class Honours (GPA 6.84/7)

Institute for Marine and Antarctic Studies, University of Tasmania, Hobart, AUSTRALIA

Supervisor: Dr. X. ZHANG, Prof. M. KING

2015 - 2017 **B.Sc. Physical Oceanography and Antarctic Science**, Ocean University of China

2+2 Bachelor joint program

College of Oceanic and Atmospheric Sciences, Ocean University of China, Qingdao, CHINA

Peer-Reviewed Publications

Publications:

[1] **Zhang, J.**, Zhang, X., King, M. A., & Lyu, K. (2024). A model-based investigation of the recent rebound of shelf water salinity in the Ross Sea. **Geophysical Research Letters**, 51, e2023GL106697. <http://dx.doi.org/10.1029/2023GL106697>.

[2] **Zhang J.**, Zhang X., King M., and Lyu K. **The Response of the Southern Ocean to Climatological Iceberg Freshwater Forcing**, Journal of Geophysical Research: Oceans (under review)

Manuscripts under internal review:

[3] **Zhang J.**, Zhang X., King M., and Lyu K. **A Slowdown of Subsurface Freshening in the Southwest Pacific Since 1990**, Journal of Climate

[4] **Zhang J.**, Zhang X., King M., and Lyu K. **Sea Level Trends and Variability in the China Marginal Seas**, Journal of Geophysical Research: Oceans

Manuscripts in preparation:

[5] **Zhang J.**, Proctor R., and Auguste C. **Assessing the accuracy of global barotropic ocean tide models: Focus on DEBOT**, Ocean Modelling

Selected Grants and Awards

2024	Australian Postgraduate Research Intern Top-up Scholarship , Tidetech, AUD\$12000 for 4 months Hobart, Australia
2023	CSRIO Top-up Scholarship , Climate Science Centre, CSIRO Environment, AUD\$7000 Hobart, Australia
2020 - 2024	Tasmania Graduate Research and Tuition Fee Scholarship , University of Tasmania, AUD\$136,620 (tuition) + \$108,000 (living allowance) for 3.5 years Hobart, AUSTRALIA
2019	Dean's Honour Roll in the College of Sciences and Engineering Hobart, AUSTRALIA
2017 - 2019	Tasmania International Scholarship , UTAS 25% tuition fee Hobart, AUSTRALIA
2017	University Outstanding Student Award , Ocean University of China Qingdao, CHINA
2016, 2017	Learning scholarship in Ocean University of China (grade top 5%) Qingdao, CHINA

Posters and Presentations at Conferences and Meetings

- [11] **Zhang, J., Zhang X., King M., and Lyu K. 2024. A Model-based Investigation of the Recent Rebound of Shelf Water Salinity in the Ross Sea.** Xiamen Symposium on Marine Environmental Sciences, Xiamen, China, Jan 2025 (Invited talk).
- [10] **Zhang, J., Zhang X., King M., and Lyu K. 2024. The response of Southern Ocean to iceberg meltwater.** ACCESS-NRI Workshop 2024, Canberra, Australia, Sep 2024 (Oral presentation). [Link](#)
- [9] **Zhang, J., Zhang X., King M., and Lyu K. 2024. Roles of surface forcing on historical salinity changes in the Southern Ocean.** ACCESS-NRI Workshop 2024, Canberra, Australia, Sep 2024 (Poster presentation). [Link](#)
- [8] **Zhang, J., Zhang X., King M., and Lyu K. 2024. A Slowdown of Subsurface Freshening in the Southwest Pacific Since 1990.** The Ocean Modelling and Observations Workshop: a joint workshop of the COSIMA and Australian Coastal and Oceans Modelling & Observations, Canberra, Australia, Jul 2024 (Poster presentation). [Link](#)
- [7] **Zhang, J., Zhang X., King M., 2023 and Lyu K. 2024. Roles of surface forcing on historical salinity changes in the Southern Ocean.** The International Union of Geodesy and Geophysics (IUGG) meeting, Berlin, Germany, Jul 2023 (Poster presentation). [Link](#)
- [6] **Zhang, J., Zhang X., King M., and Lyu K. 2023. A Model-based Investigation of the Recent Rebound of Shelf Water Salinity in the Ross Sea.** The International Union of Geodesy and Geophysics (IUGG) meeting, Berlin, Germany, Jul 2023 (Oral presentation). [Link](#)
- [5] **Zhang, J., Zhang X., King M., and Lyu K. 2022. The recent rebound of shelf water salinity in the Ross Sea induced by Atmospheric forcing.** Consortium for Ocean-Sea Ice Modelling in Australia, Hobart, Australia, Nov 2022 (Poster presentation) [Link](#)
- [4] **Zhang, J., Zhang X., King M., and Lyu K. 2021. The response of Southern Ocean to iceberg meltwater.** APECS International Online Conference, Hobart, Australia, May 2021 (Oral presentation)
- [3] **Zhang, J., 2020. A suite of speeches about the Freshwater Budget in an Ocean- Sea ice Coupled Model,** ACCESS-OM2, Consortium for Ocean-Sea Ice Modelling in Australia (COSIMA), Hobart, Australia, Mar 2020 (Oral presentation)
- [2] **Zhang, J., Zhang X., King M., 2019. Sea Level Trends and Variability in the China Marginal Seas.** Final honors research seminar, Hobart, Australia, Jun 2019 (Oral presentation)
- [1] **Zhang, J., Zhang X., King M., 2019. Sea Level Trends and Variability in the China Marginal**

Thesis

[2] **Zhang, J., 'The response of Southern Ocean to recent changes in surface freshwater fluxes'**. PhD thesis, CSIRO and University of Tasmania, April 2024

[1] **Zhang, J., 'Sea Level Trends and Variability in the China Marginal Seas'**

First-class honors thesis, Institute for Marine and Antarctic Studies, University of Tasmania, July 2019.

Selected Training and Workshops

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|------|---|
| 2024 | ACCESS-NRI Workshop 2024 , organized by ACCESS-NRI, Canberra, Australia |
| 2024 | The Ocean Modelling and Observations Workshop , a joint workshop of the COSIMA and Australian Coastal and Oceans Modelling & Observations, Canberra, Australia |
| 2024 | Winter School on Sea Level Change , organized by ACEAS and AAPP, University of Tasmania, Australia |
| 2023 | Scientific Paper Writing Workshop , organized by CSIRO, Australia |
| 2022 | COSIMA Workshop , Consortium for Ocean-Sea Ice Modelling in Australia, Hobart, Australia |
| 2022 | Writing Workshop , organized by University of Tasmania, Australia |
| 2019 | Winter School on Modelling the Climate System , organized by Australian Research Council Centre of Excellence for Climate Extremes, Australia |

Teaching and Tutoring Experience

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| Jan-Feb 2022 | Tutor , Master online unit – Advanced mathematics (with MATLAB and R)

Australia HD education, AUSTRALIA |
| Mar-Sep 2021 | Tutor , Bachelor online unit – Theoretical Mechanics

Australia HD education, AUSTRALIA |
| Sep 2020 | Tutor , Bachelor unit – Numerical ice sheet dynamic training

GRANTISM Ice Sheet Model training

Institute for Marine and Antarctic Studies (IMAS), University of Tasmania, AUSTRALIA |

Aug-Nov 2020 **Tutor**, Bachelor unit – KGA320 Our Changing Climate

Institute for Marine and Antarctic Studies (IMAS), University of Tasmania, **AUSTRALIA**

Unit Coordinator: Dr. Sue Cook

Employment and Service

2024- now **Research Scientist /Tidal Modeler**, Tidetech, Internship, **Australia**

2022-2023 **Antarctic Expedition Guide**, of Antarctica Expedition Cruises, Silversea Cruises, **Antarctica**

2022-2023 **Onboard Scientist/ Lecturer**, of Antarctica Expedition Cruises, Silversea Cruises, **Antarctica**

2021–2023 **Team Interpreter**, working with international basketball player, for Brisbane Bullets, **Australia**

2020 – 2023 **Member**, of the Southern Ocean sea-level change project team, CSIRO, **Australia**

2020 - now **Member**, of Consortium for Ocean-Sea Ice Modelling in Australia (COSIMA), **Australia**

2019 – 2022 **Member**, of the Centre for Southern Hemisphere Oceans Research team, CSIRO, **Australia**

Engagement and Outreach

Jan-Feb 2023 **Cruise Ship Lecturer/ Expedition guide**: Invited by Silversea Cruises as an on-board lecturer, delivering a series of talks on topics including Antarctic glaciers, global warming, sea level rise, Antarctica

May 2022 **Interviewed** by Local Community New about the Antarctic Scientific Research, University of Tasmania, Australia

Oct 2019 **Student ambassador** of Australia Education Management Group (AEMG): a formal speech to Chinese students about the Institute for Marine and Antarctic Studies, Antarctic scientific research, and overseas life and study, Australia

Other Professional Experience

Apr 2018 **Sea-going Field Work, Scientific research voyage** on the Marine National Facility research vessel *Investigator* (CSIRO). **Task**: Data Collection and Quality Control. Gained experience with CTD and Argo float deployment, collecting physical, chemical, and biological oceanographic data of the East Australian Current (EAC) on a voyage from Hobart to Brisbane, Australia

Technical Skills

Computing:

- Programming: Python, Jupyterlab/notebook, MATLAB, Fortran
- Numerical Models: coupled model (ACCESS-OM2), ocean model (MOM5, ROMS), sea ice model (CICE5), and tidal model (DEBOT)
- Version control: Git, Github
- QGIS, Big data analysis
- Operating systems: Linux, Mac OS, and Windows

Language:

- English (Advanced)
- Mandarin (Mother tongue)

Referees

Prof Matt King

Director, Australian Centre for Excellence in Antarctic Science (ACEAS) and

Professor, School of Geography, Planning, and Spatial Sciences, University of Tasmania, Australia

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Dr Xuebin Zhang

Principal Research Scientist, Team Leader,

Climate Science Centre, CSIRO Environment, Hobart, Australia

E-mail: xuebin.zhang@csiro.au | Phone: +61 362325043

Prof Kewei Lyu

Professor, State Key Laboratory of Marine Environmental Science, College of Ocean and Earth Sciences, Xiamen University, Xiamen, China

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