Dr. Luwei Yang

Physical Oceanographer
Department of Ocean Science luweiy.ocean@gmail.com
The Hong Kong University of Science and Technology luweiyang.github.io

EMPLOYMENT

- **Postdoctoral Research Fellow** 2026–present
  Department of Ocean Science, The Hong Kong University of Science and Technology
- **Visiting and Honorary Appointee** 2026–present
  Research School of Earth Sciences, Australian National University
- **Postdoctoral Research Fellow** 2023–2026
  Research School of Earth Sciences, Australian National University
- **Postdoctoral Researcher** 2020–2023
  Department of Atmospheric & Oceanic Sciences, University of California, Los Angeles

EDUCATION

- **PhD in Quantitative Marine Science** 2015–2019
  University of Tasmania
- **BSc in Marine Science** 2011–2015
  Ocean University of China

PUBLICATIONS

Peer-reviewed journal articles

[8] **Yang, L.**, Shakespeare, C.J., and B.K. Arbic, **2026**: Propagating internal-tide-induced wave stresses resolve discrepancies in ocean surface tide energetics. *Geophysical Research Letters*, 53, e2026GL123598, doi: 10.1029/2026GL123598

[7] **Yang, L.**, C.J. Shakespeare, A.K. Morrison, A.M. Hogg, A.H. Gibson, and B.K. Arbic, **2026**: Sensitivity of M_2 barotropic tide solutions to resolution and a physically based wave drag parameterization. *Journal of Advances in Modeling Earth Systems*, 18, e2025MS005528, doi: 10.1029/2025MS005528

[6] Barnes, A.J., N.C. Constantinou, A.H. Gibson, A.E. Kiss, C. Chapman, J. Reilly, D. Bhagtani, and **L. Yang**, **2024**: regional-mom6: A Python package for automatic generation of regional configurations for the Modular Ocean Model 6. *Journal of Open Source Software*, 9(100), doi: 10.21105/joss.06857

[5] **Yang, L.**, R. Barkan, K. Srinivasan, J.C. McWilliams, C.J. Shakespeare, and A.H. Gibson, **2023**: Oceanic eddies induce a rapid formation of an internal wave continuum. *Communications Earth & Environment*, 4(1), doi: 10.1038/s43247-023-01137-1

[4] **Yang, L.**, M. Nikurashin, A.M. Hogg, and B.M. Sloyan, **2023**: Lee waves break eddy saturation of the Antarctic Circumpolar Current. *Geophysical Research Letters*, 50(11), doi: 10.1029/2023GL103866

[3] Barkan, R., K. Srinivasan, **L. Yang**, J.C. McWilliams, J. Gula, and C. Vic, **2021**: Oceanic mesoscale eddy depletion catalyzed by internal waves. *Geophysical Research Letters*, 48(18), doi: 10.1029/2021GL094376

[2] **Yang, L.**, M. Nikurashin, A.M. Hogg, and B.M. Sloyan, **2021**: The impact of lee waves on the Southern Ocean circulation. *Journal of Physical Oceanography*, 51(9), 2933-2950, doi: 10.1175/JPO-D-20-0263.1

[1] **Yang, L.**, M. Nikurashin, A.M. Hogg, and B.M. Sloyan, **2018**: Energy Loss from Transient Eddies due to Lee Wave Generation in the Southern Ocean. *Journal of Physical Oceanography*, 48(12), 2867–2885, doi: 10.1175/JPO-D-18-0077.1

Submitted

My students' names are underscored.

- Ellepola, A., C.J. Shakespeare, and **L. Yang**. Beyond linear barotropic instability: a study on growth and lifetime of submesoscale frontal eddies in slope currents.

Manuscript in preparation

- **Yang, L.**, C.J. Shakespeare, and A.H. Gibson. Resolved impacts of propagating internal tides in a global baroclinic tide model.
- Constantinou et al. (including **L. Yang**). COSIMA Cookbook: a community-driven resource for ocean and sea-ice modelling science. *Journal of Open Source Education*. [draft]

Other publications

- **Yang, L.**, C.J. Shakespeare, **2026**: Earth's tides are shaped by more than the Moon. And they're changing as the planet warms. *The Conversation*, doi: 10.64628/AA.9gu6v4jtm

RESEARCH FUNDING & COMPUTATIONAL ALLOCATIONS

- **Project Title:** Parameterising unresolved ocean dynamics and thermodynamics (**Role:** Co-CI, Lead CI: Callum Shakespeare)
  Awarding Program: National Computational Merit Allocation Scheme (NCMAS)
  Awarded Resources: 1,000 kSU (estimated cash value: AUD 40,000)
  Period: 2024 (Project NCMAS-2024-22), 2025 (Project NCMAS-2025-141)
- **Project Title:** Near-inertial wave–mesoscale eddy–submesoscale current interactions in high-resolution numerical models (**Role:** PI, Co-PI: Roy Barkan)
  Awarding Program: NSF-funded ACCESS Allocations
  Awarded Resources: 200,000 ACCESS Credits (estimated cash value: USD 1,086)
  Period: Oct 2022–Oct 2023 (Project EES220050; extended to Apr 2024)

TEACHING EXPERIENCE

- **Field Trip Assistant:** The Blue Planet (EMSC1006/6107) Semester 1, 2026
  Australian National University
  – Volunteered to support the ACT Hydrological Systems Field Trip, a practical component of an Earth system science course.
  – Assisted with temperature profiling and river flow measurements at several sites in the ACT.
- **Lecturer:** Fundamentals of Climate Science (EMSC2021) Semester 2, 2024
  Australian National University
  Core second-year course in the Research School of Earth Sciences.
  Enrolments: 45 undergraduate and master's students.
  – 2 weeks, co-taught within a flipped-classroom format.
  – Delivered lectures (1-hour), facilitated problem-solving tutorials (1-hour) and computational laboratories (3-hour), marked assignments and exam papers.
  – Received Student Experience of Learning and Teaching (SELT) ratings for respect towards students (4.8/5), stimulating interest (4.5/5), and supporting student learning (4.5/5).

SUPERVISION

- **PhD Co-supervisor: Anupiya Ellepola** 2024–present
  Australian National University
  – Project: Eddies, tides, and eddy–tide interactions of Australia's North West Shelf
  – Attended weekly research meetings, provided regular feedback on research progress, posters, and written documents (literature review and manuscripts).

- **Undergraduate Research Supervisor: Audrey Smart** 2024
  Australian National University
  - Project: Understanding the importance of model resolution for simulating tidal energy
  - Advanced Studies Course, Bachelor of Philosophy (Honours) – Science Degree
  - Provided guidance on literature review, data analysis, written and oral presentation.

SELECTED HONOURS & AWARDS

- **Best Early Career Researcher Presentation** 2024
  Ocean Modeling and Observations Workshop, Canberra, ACT, Australia
- **Competitively Selected Participant (fully funded)** 2021
  Physical Oceanography Dissertations Symposium (PODS) XI, Lihue, Hawai'i, United States
- **Travel Bursary (EUR 1,000)** 2017
  Summer School on the Fluid Dynamics of Sustainability and the Environment, École Polytechnique, France
- **Travel scholarship (AUD 2,000)** 2017
  CSIRO-UTAS Joint Program in Quantitative Marine Science
- **Student Oral Presentation Honourable Mention** 2017
  AMOS/MSNZ Conference & ANZ Climate Forum, Canberra, ACT, Australia
- **QMS Base & Top-up Scholarship (AUD 30,849 per annum)** 2015–2018
  CSIRO-UTAS Joint Program in Quantitative Marine Science (QMS)
- **National Scholarship (CNY 8,000)** 2014
  Ministry of Education of China

PROFESSIONAL SERVICE

- **ACCESS-OM3 Development Collaborator** 2025–present
  Consortium for Ocean-Sea Ice Modeling in Australia (COSIMA) and ACCESS-NRI
  - Developed and implemented physically based wave drag and mixing parameterizations in MOM6.
  - Contributed to the development of ACCESS-OM3, Australia's global coupled ocean–sea ice–wave model.
- **Peer Reviewer: 9 manuscripts** 2020–present
  Journal of Physical Oceanography (3), Journal of Advances in Modeling Earth Systems (3), Journal of Geophysical Research: Oceans (1), Journal of Fluid Mechanics (1), Geophysical Research Letters (1)
  Counts represent distinct manuscripts and exclude subsequent review rounds.
- **Group Meeting Coordinator** 2024–2025
  Climate and Fluid Physics, Research School of Earth Sciences, Australian National University
- **Discussion Leader** June 2024
  Gordon Research Seminar on Ocean Mixing, South Hadley, Massachusetts, United States
- **Postdoctoral Fellow Selection Committee Member** March 2024
  Australian National University
- **PhD Student Representative and ECR Committee Member** 2018
  ARC Centre of Excellence for Climate Extremes, University of Tasmania

SCIENCE OUTREACH

- **Volunteer Science Demonstrator**, ANU Open Day 29 March 2025
  Australian National University
  - Led an interactive "Icebergs in the Southern Ocean" experiment using a rotating tank and thermal camera, engaging prospective students in discussions of ocean circulation and climate science.
- **Volunteer Instructor and Demonstrator**, IMAS Work Experience Program
  Institute for Marine and Antarctic Studies, University of Tasmania June–July 2018
  - Designed and delivered a one-hour lecture, "How Do We Study the Oceans? Research in Physical Oceanography," to two groups of high-school students from across Australia.

  - Led a rotating-tank experiment demonstrating ocean gyres and western boundary intensification.
- **Volunteer Educator**, Young Antarctic Scientists Program May and December 2018
  Clarendon Vale Primary School, Tasmania
  - Delivered hands-on activities for Year 4 students introducing ocean layering and density, carbon dioxide chemistry, and drone-based environmental observations.

SELECTED PRESENTATIONS

Invited Talks

- **Propagating internal-tide-induced wave stresses resolve discrepancies in ocean tide energetics**
  Gordon Research Seminar on Ocean Mixing, South Hadley, Massachusetts, United States 2026
  Registration supported by the conference organisers.
- **The impact of lee waves on the Southern Ocean circulation and its response to changes in wind stress**
  Department of Ocean Science, The Hong Kong University of Science and Technology, online 2022
- **The impact of lee waves on the Southern Ocean circulation and its response to changes in wind stress**
  Physical Oceanography Dissertations Symposium (PODS) XI, Lihue, Kaua'i, Hawai'i, United States 2021
  Competitively selected; participation fully funded by the symposium sponsors.
- **The impact of lee waves on the Southern Ocean circulation and its response to changes in wind stress**
  Polar Oceans Seminar, British Antarctic Survey, online 2020

Oral Presentations

- **Implementing and evaluating a novel tidal wave-drag parameterization in MOM6**
  Ocean Modeling and Observations Workshop, Canberra, ACT, Australia 2024
  Awarded Best Early Career Researcher Presentation.
- **Connecting ocean tides to the large-scale ocean circulation: Tidal parameterization development in MOM6**
  Bluelink Annual Science Meeting, Melbourne, Victoria, Australia 2024
- **Oceanic eddies induce a rapid formation of an internal-wave continuum**
  CASPO Seminar, Scripps Institution of Oceanography, La Jolla, California, United States 2024
- **Lee waves break eddy saturation of the Antarctic Circumpolar Current**
  Ocean Sciences Meeting 2024, HE41B-07, New Orleans, Louisiana, United States 2024
- **Oceanic eddies induce a rapid formation of an internal-wave continuum**
  Ocean Sciences Meeting 2024, PS21A-07, New Orleans, Louisiana, United States 2024
- **Impacts of lee waves on the Southern Ocean circulation and its sensitivity to wind stress**
  22nd Conference on Atmospheric and Oceanic Fluid Dynamics, Idealized Model Approaches to the Atmosphere and Ocean Circulation 7.2, Portland, Maine, United States 2019
- **The role of lee waves in the dissipation of transient eddies in the Southern Ocean**
  Ocean Sciences Meeting 2018, PO12A-04, Portland, Oregon, United States 2018
- **The role of lee waves in the dissipation of transient eddies in the Southern Ocean**
  21st Conference on Atmospheric and Oceanic Fluid Dynamics and 19th Conference on Middle Atmosphere, Mesoscale Ocean Dynamics 13.2, Portland, Oregon, United States 2017
- **The role of lee waves in the dissipation of transient eddies in the Southern Ocean**
  AMOS/MSNZ Conference and ANZ Climate Forum, Canberra, ACT, Australia 2017
  Student Oral Presentation Honourable Mention.

Last updated: November 15, 2026