

Houghton Postdoctoral Fellow
 Department of Earth, Atmospheric & Planetary Sciences
 Massachusetts Institute of Technology
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EDUCATION

- | | |
|-------------------|---|
| 09/2018 – 06/2023 | Department of Atmospheric and Oceanic Sciences, University of California, Los Angeles
<i>Ph.D. in Physical Oceanography (June 2023)</i>
<i>M.S. in Atmospheric and Oceanic Sciences (Dec. 2020)</i>
Advisor: Prof. Andrew L. Stewart |
| 09/2014 – 07/2018 | School of Physics, Peking University
<i>B.S. in Astronomy (with honors, July 2018)</i>
Advisors: Prof. Jun Yang and Prof. Yongyun Hu |

PUBLICATIONS

In prep

- Y. Si and R. Ferrari. Tidally-Induced Turbulence over Sloping Topography. (*In prep*)

Submitted († *Student advisees*)

1. S. Spungin†, **Y. Si**, A. L. Stewart, and C. J. Prend. Observed Seasonality of Mixed-Layer Eddies and Vertical Heat Transport over the Antarctic Continental Shelf. (*Submitted to the Journal of Geophysical Research: Oceans*)
2. X. Ruan, **Y. Si**, and R. Ferrari. Diapycnal upwelling driven by tidally-induced mixing over steep topography. (*Submitted to the Journal of Physical Oceanography*)

Peer-reviewed:

3. **Y. Si**, A. L. Stewart, A. Silvano, and A. C. Naveira Garabato. Antarctic slope undercurrent and onshore heat transport driven by ice shelf melting. *Science Advances*, 2024. [[doi](#), [code](#)]
4. C. R. Schmidgall†, **Y. Si**, A. L. Stewart, A. F. Thompson, and A. McC. Hogg. Dynamical controls on bottom water transport and transformation across the Antarctic Circumpolar Current. *Journal of Physical Oceanography*, 2023. [[doi](#), [code](#), [pdf](#)]
5. **Y. Si**, A. L. Stewart, and I. Eisenman. Heat transport across the Antarctic Slope Front controlled by cross-slope salinity gradients. *Science Advances*, 2023. [[doi](#), [code](#)]
6. A. Silvano, P. Holland, K. Naughten, O. Dragomir, P. Dutrieux, A. Jenkins, **Y. Si**, A. L. Stewart, B. Pena-Molino, G. Janzing, T. Dotto, and A. C. Naveira Garabato. Baroclinic ocean response to climate forcing regulates decadal variability of ice-shelf melting in the Amundsen Sea. *Geophysical Research Letters*, 2022. [[doi](#)]
7. **Y. Si**, A. L. Stewart, and I. Eisenman. Coupled ocean/sea ice dynamics of the Antarctic Slope Current driven by topographic eddy suppression and sea ice momentum redistribution. *Journal of Physical Oceanography*, 2022. [[doi](#), [code](#), [pdf](#)]
8. **Y. Si**, J. Yang, and Y. Liu. Planetary climate under extremely high vertical diffusivity. *Astronomy & Astrophysics*, 2022. [[doi](#), [code](#), [pdf](#)]

Dissertation:

- **Y. Si**. Ice-Ocean Interactions in the Antarctic Slope Current. *PhD Dissertation*, 2023. [[url](#), [pdf](#)]

RESEARCH SUPPORT & FELLOWSHIP

08/2023 – 06/2025	National Center for Atmospheric Research Large Allocation: Tidally-Induced Turbulence over Sloping Topography
06/2023 – 06/2025	MIT Distinguished Postdoctoral Fellowship in Earth, Atmospheric & Planetary Sciences
10/2022 – 06/2023	UCLA Dissertation Year Fellowship
09/2018 – 08/2022	China Scholarship Council Fellowship
12/2017	AGU Fall Meeting Student Travel Grant
04/2016 – 10/2017	President's Research Grant for Undergraduate Students, Peking University

AWARDS

01/2024	Jacob A. Bjerknes Award, Department of Atmospheric and Oceanic Sciences, UCLA
07/2018	Outstanding Student Research Award, the 5th Conference on Earth System Science
07/2018	Beijing Outstanding Graduate Award
07/2018	Peking University Outstanding Graduate Award
06/2018	Outstanding Bachelor's Thesis, School of Physics, Peking University
11/2017	Wei-Ming-Xue-Zi Scholarship, School of Physics, Peking University
10/2017	May 4th Scholarship, Peking University
10/2017	Outstanding Student Award, Peking University
09/2017	Outstanding Oral Presentation Award, Chinese Meteorological Society
10/2015	Social Work Award, Peking University

SEMINARS

01/2024	Peking University Atmospheric & Oceanic Sciences Department Seminar
06/2023	Climate Dynamics Group (<i>Online</i>)
04/2023	UCLA Atmospheric & Oceanic Sciences Department Seminar
11/2021	Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (<i>Online</i>)
04/2021	Climate Dynamics Group (<i>Online</i>)
03/2021	Antarctic Margins Meeting at ANU, UNSW, and CSIRO (<i>Online</i>)

CONFERENCES (PRESENTER)

06/2024	Ocean Mixing Gordon Research Conference (<i>Poster</i>)
06/2023	2nd US Antarctic Science Meeting (<i>Talk</i>)
12/2022	AGU Fall Meeting (<i>Posters</i>)
08/2022	SCAR (Scientific Committee on Antarctic Research) Meeting (<i>Talk</i>)
06/2022	23rd Conference on Atmospheric and Oceanic Fluid Dynamics (<i>Talk</i>)
03/2022	AGU Ocean Sciences Meeting (<i>Talk</i>)
01/2022	Peking University-Fudan University AOS Symposium (<i>Talk</i>)
09/2021	California Geophysical Fluid Dynamics Meeting (<i>Talk</i>)
07/2021	US Antarctic Science Meeting (<i>Talk</i>)
08/2020	California Geophysical Fluid Dynamics Meeting (<i>Talk</i>)
02/2020	AGU Ocean Sciences Meeting (<i>Poster</i>)
07/2018	5th Conference on Earth System Science, Shanghai (<i>Poster</i>)
12/2017	AGU Fall Meeting (<i>Poster</i>)
09/2017	Chinese Meteorological Society Annual Meeting (<i>Talk</i>)

TEACHING

Fall 2021	Teaching Associate of AOS 103, Introduction to Physical Oceanography (Overall score in student evaluations of teaching: 9.6/10)
Fall 2019, 2020	Teaching Assistant of AOS 103
Spring 2019	Teaching Assistant of AOS 2, Air Pollution

MENTORSHIP

03/2022 – 06/2023	Sophia Spungin, post-undergraduate researcher
01/2020 – 03/2022	Carlyn Schmidgall, post-undergraduate researcher

VOLUNTEER & OUTREACH

Winter 2021	Co-host of Ocean Study Group for first-year AOS graduate students
Winter 2021	AOS lightning talk for prospective students
Fall 2019	Project Scientist volunteer (Helped 30 girls ages 4-12 get hands-on coding experience in fluid dynamics.)
Fall 2016	Co-organizer of Peking University Undergraduate Astronomy Symposium
Summer 2016	Asia Oceania Geosciences Society (AOGS) Annual Meeting volunteer
Spring 2015	Astronomy education and outreach volunteer (Gave 12 Astronomy lectures at Beijing No.1 Middle School and assisted in the organization of astronomy observations.)

SERVICE

2024	Co-convenor for the AGU Fall Meeting Session: <i>Ice-Ocean interactions along Antarctica's Continental Shelf</i>
Since 2022	Reviewer for the <i>Journal of Climate</i> , <i>Journal of Physical Oceanography</i> , and <i>Journal of Geophysical Research: Oceans</i> .
2021	UCLA AOS Computer Committee