

# Stanford

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## Earle Wilson

Assistant Professor of Earth System Science, by courtesy, of Geophysics, of Oceans and Center Fellow, by courtesy, at the Woods Institute for the Environment

### Bio

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#### BIO

Earle Wilson is an assistant professor in the Department of Earth System Science. He is a physical oceanographer who studies ocean dynamics at high latitudes and their far-reaching impacts on the global climate. He is particularly interested in the circulation of the Southern Ocean and its interactions with the cryosphere (i.e., sea ice and marine-terminating glaciers). Dr. Wilson and his group explore these research questions using various tools and methods, ranging from in situ ocean observations and idealized numerical models.

#### ACADEMIC APPOINTMENTS

- Assistant Professor, Earth System Science
- Center Fellow (By courtesy), Stanford Woods Institute for the Environment
- Assistant Professor (By courtesy), Oceans

#### ADMINISTRATIVE APPOINTMENTS

- Assistant Professor, Earth System Science, (2022- present)

#### PROFESSIONAL EDUCATION

- PhD, University of Washington , Oceanography (2019)
- BS, Columbia University , Applied Physics (2012)

#### LINKS

- group website: <https://polar.stanford.edu/>

### Teaching

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#### COURSES

##### 2025-26

- Atmosphere, Ocean, and Climate Dynamics: the Ocean Circulation: CEE 162I, CEE 262I, EARTHSYS 146B, ESS 246B (Win)
- Our Icy Oceans: ESS 60N (Spr)

##### 2024-25

- Atmosphere, Ocean, and Climate Dynamics: the Ocean Circulation: CEE 162I, CEE 262I, EARTHSYS 146B, ESS 246B (Win)
- Polar Climate Dynamics: ESS 248 (Spr)

##### 2023-24

- Polar Climate Dynamics: ESS 248 (Spr)

## 2022-23

- Atmosphere, Ocean, and Climate Dynamics: the Ocean Circulation: CEE 162I, CEE 262I, EARTHSYS 146B, ESS 246B (Win)

## STANFORD ADVISEES

### Doctoral Dissertation Reader (AC)

Jared Trok

### Doctoral (Program)

Lexi Arlen, JeongHyun Kim, Lemona Niu

## Publications

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### PUBLICATIONS

- **Recent extremes in Antarctic sea ice extent modulated by ocean heat ventilation.** *Proceedings of the National Academy of Sciences of the United States of America*  
Wilson, E. A., Arlen, L., Campbell, E. C.  
2026; 123 (14): e2530832123
- **Modeling mixing and melting in laminar seawater intrusions under grounded ice** *CRYOSPHERE*  
Mamer, M. S., Robel, A. A., Lai, C. C. K., Wilson, E., Washam, P.  
2025; 19 (8): 3227-3251
- **The Impact of Underestimated Southern Ocean Freshening on Simulated Historical Sea Surface Temperature Trends** *Geophysical Research Letters*  
Kaufman, Z., Wilson, E., Purich, A., Beadling, R., Li, Y.  
2025
- **A Framework for Observing Changes in Sea Ice Due to Extratropical Cyclones in the Southern Ocean**  
Tucker, J. A., Schroeder, D. M., Wilson, E. W., IEEE  
IEEE.2025: 76-+
- **Future Priorities for Observing the Dynamics of the Southern Ocean** *BULLETIN OF THE AMERICAN METEOROLOGICAL SOCIETY*  
Wilson, E. A., Dove, L. A., Gray, A. R., Macgilchrist, G., Purkey, S., Thompson, A. F., Youngs, M., Diggs, S., Balwada, D., Campbell, E. C., Talley, L. D.  
2024; 105 (12): E2316-E2323
- **Mechanisms for Abrupt Summertime Circumpolar Surface Warming in the Southern Ocean** *JOURNAL OF CLIMATE*  
Wilson, E. A., Bonan, D. B., Thompson, A. F., Armstrong, N., Riser, S. C.  
2023; 36 (20): 7025-7039
- **Coastal Polynyas Enable Transitions Between High and Low West Antarctic Ice Shelf Melt Rates** *GEOPHYSICAL RESEARCH LETTERS*  
Moorman, R., Thompson, A. F., Wilson, E. A.  
2023; 50 (16)
- **Commercial krill fishing within a foraging supergroup of fin whales in the Southern Ocean.** *Ecology*  
Ryan, C., Santangelo, M., Stephenson, B., Branch, T. A., Wilson, E. A., Savoca, M. S.  
2023: e4002
- **Tracking Southern Ocean Sea Ice Extent With Winter Water: A New Method Based on the Oxygen Isotopic Signature of Foraminifera** *PALEOCEANOGRAPHY AND PALEOCLIMATOLOGY*  
Lund, D. C., Chase, Z., Kohfeld, K. E., Wilson, E. A.  
2021; 36 (6)