

# Ziqi Yin

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## Education

- 2021–present **PhD, Atmospheric & Oceanic Sciences**, *University of Colorado, Boulder*, Department of Atmospheric and Oceanic Sciences (ATOC), Boulder.  
Studying ice sheet and its interaction with climate  
Advisor : **Prof. Aneesh Subramanian, Prof. Jan Lenaerts, ATOC**
- 2018–2020 **M.S., Atmospheric Sciences, Oceanography & Climate**, *Stockholm University*, Department of Meteorology (MISU), Stockholm.
- 2019/08–2019/09 **One month student in Arctic Geophysics**, *The University Center in Svalbard, Svalbard*.
- 2014–2018 **B.S., Resources & Environmental Sciences**, *Beijing Normal University (BNU)*, Faculty of Geographical Science, Beijing.

## Working experience

- Spring 2022 **Research assistant**, *University of Colorado, Boulder*, ATOC, Boulder.  
–present
- Fall 2021 **Teaching assistant**, *University of Colorado, Boulder*, ATOC, Boulder.
- 2020–2021 **Research intern**, *Xiamen University*, State Key Laboratory of Marine Environmental Science (MEL), Xiamen.

## Publications

### In preparation

**Yin, Z.**, Herrington, A.R., Datta, R.T., Subramanian, A., Lenaerts, J.T.M., and Gettelman, A., Improved Understanding of Multicentury Greenland Ice Sheet Response to Strong Warming in the Coupled CESM2-CISM2 with Regional Grid Refinement, to submit to *Journal of Advances in Modeling Earth Systems*.

**Yin, Z.**, Jeffery, N., Wang, S., Optical Impact of Ice Algae on Arctic Sea Ice Properties: A Study With the Community Earth System Model 2.

### Published

- 2023 Datta, R.T., Herrington, A., Lenaerts, J.T.M., Schneider, D.P., Trusel, L., **Yin, Z.**, and Dunmire, D., Evaluating the impact of enhanced horizontal resolution over the Antarctic domain using a variable-resolution Earth system model, *The Cryosphere*.

### Theses

- 2020 **Yin, Z.**, Ice-ocean interactions in a Greenland fjord, Master thesis, Stockholm University.  
Advisor: Prof. Inga Koszalka, Prof. Johan Nilsson
- 2018 **Yin, Z.**, Evaporation over the lakes on the Tibetan Plateau and its response to climate change, Bachelor thesis, Beijing Normal University.  
Advisor: Prof. Xiaoyan Li

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## Other research experience

### University of Colorado, Boulder

2023/11–present **Identifying energy balance drivers and feedbacks of Greenland Ice Sheet surface melt using causal inference.**

Use causal inference method PCMC<sup>+</sup> to analyze coupled CESM2-CISM2 outputs to identify the drivers/feedbacks of Greenland Ice Sheet surface melt and its potential changes in a warmer climate

Advisor: Prof. Aneesh Subramanian

2022/01–2022/08 **Precipitation biases over the Greenland and Antarctic Ice Sheets in CESM2.**

Evaluated the ice sheet precipitation using CESM2 with two different dynamical cores, four different grids with different horizontal resolutions, by comparing with reanalysis data and regional climate model outputs

Advisor: Prof. Jan Lenaerts

### Stockholm University

2019/05–2019/06 **Post-processing of measurement data at Lake Tarfala.**

Wrote Matlab scripts for analyzing and plotting water temperature and meteorological data.

Advisor: Prof. Nina Kirchner

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## Presentation

2023/12 Identifying energy balance drivers and feedbacks of Greenland Ice Sheet Surface Melt using Causal Inference (poster), *AGU Fall meeting 2023*.

2023/04 High-resolution, fully-coupled simulations of the Greenland Ice Sheet in a future, strong warming scenario (talk), *ATOC colloquium*.

2023/02 High-resolution, fully-coupled simulations of the Greenland Ice Sheet in a future, strong warming scenario (talk), *CESM Land Ice Working Group Meeting*.

2022/12 High-resolution, fully-coupled simulations of the Greenland Ice Sheet in a future, strong warming scenario (poster), *AGU Fall meeting 2022*.

2022/08 Precipitation biases over the Greenland and Antarctic Ice Sheets in CESM2 (poster), *AMS Collective Madison Meeting*.

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## Teaching experience

2022/05 **ATOC REU Python Bootcamp**, *Graduate student teacher*.

Taught two lectures and coding exercises to teach undergraduate students basic Python coding tools

Fall 2021 **ATOC-1060 Our Changing Environment**, *Teaching assistant*.

Lead reading sections, exam reviews, and grading

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## Field experience

2019/11/15 **Baltic sea student cruise**, *R/V ELECTRA*, Landsort Deep (Baltic Sea).

CTD, ADCP and related meteorological observations along the profile from Askö to the deepest spot of Baltic Sea

2019/08–2019/09 **Cruise and day trips of Arctic glacier hydrology and landscape**, *Stålbas*, Svalbard.

Carried out ground penetrating radar, proglacial water monitoring and sampling, dye tracing to understand glacier hydrology from a whole-system perspective at selected glaciers

2016/08 **Comprehensive field session of Meteorology, Botany and Pedology**, *Beijing*.

Set up a weather station, identified vegetation, observed soil profiles and meteorological variables of different underlying surface and altitude

2016/07 **Hydroecology field work**, *Qinghai Lake Basin, Qinghai*.

Assisted with meteorological and eddy covariance measurements, and biomass estimation

2015/07 **Hydropedology field work**, *Heihe River Basin, Gansu*.  
Assisted with artificial precipitation and stem flow experiments, photosynthesis measurements, and soil and desert vegetation sampling

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## Workshop & Training

2024/01 **Polar Amplification of Climate Change: Causes and Constraints Workshop**, *Boulder, CO*.  
2023/10 **GeoSMART Hackweek 2023**, *Seattle, WA*.  
2023/06 **2nd Antarctic Atmospheric River Workshop**, *Boulder, CO*.  
2023/06 **2nd Annual Colorado Glaciology Workshop**, *Fort Collins, CO*.  
2022/09 **AntClimNow Workshop on Connecting Models and Observations of the Antarctic Climate System Across Timescales**, *Cambridge, UK*.  
2022/04 **1st Colorado Glaciology workshop**, *Golden, CO*.

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## Fellowships & Awards

2023/12 **Best poster in the Polar Processes Session** of the 17th Annual ATOC-sponsored Earth System & Space Science (ESSS) Poster Conference  
2022/12 **Best poster in the Snow, Ice, and Space Session** of the 16th Annual ATOC-sponsored Earth System & Space Science (ESSS) Poster Conference  
2017/10 **Third-class Scholarship** of BNU  
2016/07 **Volunteer Scholarship** of BNU  
2014/09 **Second-class Freshman Scholarship** of BNU

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## Service

### Service to the field

2023/05-2023/07 **UCAR Significant Opportunities in Atmospheric Research & Science (SOARS) project**, co-mentor

### Service & Outreach

Fall 2022 **ATOC colloquium committee**, member  
–present

### Volunteer

2018/07 Yunnan snub-nosed monkey protection at Baima Snow Mountain National Reserve. Yunnan, China  
2014/09-2016/06 Campus Energy Saving Project of the Volunteering Association of BNU. Beijing, China

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## Skills

Programming Languages & Operators Python (proficient), Fortran, Matlab, CDO, NCO, Bash  
Operating System Linux, Mac OS, Windows  
Software Models worked with Latex, Jupyter Lab/Notebook, Git/GitHub, Microsoft Office, ArcGIS, Envi, Inkscape  
CESM2, Veros, MPI-ESM, ISSM  
Languages Chinese, English