

# Xia Li

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I am currently a Research Scientist at Florida State University. I study small-scale processes in polar atmosphere to address big questions on global climate system.

## Education

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- **University of Utah** **2017–2022**  
*Ph.D. in Atmospheric Sciences* *Salt Lake City, UT*  
Advisor: Steven K. Krueger  
Co-advisor: Courtenay Strong  
Other thesis committee: Gerald G. Mace, James R. Stoll, Jennifer E. Kay  
Wintertime Arctic low-level clouds: Sea ice lead impacts and radiative effects
- **Institute of Atmospheric Physics, Chinese Academy of Sciences** **2013–2016**  
*M.S. in Physical Oceanography* *Beijing, China*  
Advisor: Jiang Zhu
- **Nanjing University of Information Science & Technology** **2009–2013**  
*B.S. in Atmospheric Sciences* *Nanjing, China*

## Professional Experience

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- **Research Scientist** **07/2026–present**  
*Florida State University*  
Collaboration with Michael Diamond
- **Postdoctoral Scholar** **11/2024–07/2026**  
*University of California, Los Angeles*  
Advisor: Jasper Kok, collaborated with Ian Eisenman and Amato Evan
- **Postdoctoral Fellow** **2022–2024**  
*Princeton University*  
Hosts: Mitchell Bushuk, Zhihong Tan, Leo J. Donner
- **Graduate Research Assistant** **2017–2022**  
*University of Utah*
- **Graduate Research Assistant** **2013–2016**  
*Institute of Atmospheric Physics, Chinese Academy of Sciences*
- **Visiting Graduate Student** **2015**  
*Hong Kong University of Science and Technology*

## Publications

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- **X. Li et al.** Cloud-based Arctic radiation management in idealized CESM simulations. (*in preparation*)

- **X. Li** et al. Limited climate response to extreme Arctic mixed-phase cloud thinning. (*in preparation*)
- **X. Li** et al. Small differences in sea ice concentration amplify low-level cloud discrepancies between CMIP6's CMIP and AMIP simulations. (*to be submitted to GRL*)
- **X. Li**, Z. Tan, Y. Zheng, M. Bushuk, and L. Donner. Open water in sea ice causes high bias in polar low-level clouds in GFDL CM4. *Geophysical Research Letters*, 50, 2023GL106322 (2023)
- **X. Li**, G. Mace, C. Strong, and S. Krueger. Wintertime cooling of the Arctic TOA by low-level clouds. *Geophysical Research Letters*, 50, e2023GL104869 (2023)
- **X. Li**, S. Krueger, C. Strong, and G. Mace. Relationship between midwinter leads and low clouds in the pan-Arctic. *Journal of Geophysical Research-Atmosphere*, 125, e2020JD032595 (2020)
- **X. Li**, S. Krueger, C. Strong, G. Mace, and S. Benson. Midwinter Arctic Leads Form and Dissipate Low Clouds. *Nature Communications* 11, 1-8 (2020)
- F. Li, J. Song, and **X. Li**. A preliminary evaluation of the necessity of using a cumulus parameterization scheme in high-resolution simulations of Typhoon Haiyan. *Natural Hazards* 92(2), 647-671 (2018)
- F. Li, J. Song, H. He, S. Li, **X. Li**, & S. Guan. Assessment of surface drag coefficient parametrizations based on observations and simulations using the Weather Research and Forecasting model. *Atmospheric and Oceanic Science Letters*, 9(4), 327–336 (2016)
- **X. Li** and J. Zhu. A weakly coupled data assimilation system of a coupled physical–biological model for the northeastern South China Sea. *Atmospheric and Oceanic Science Letters* 9(5), 352–360 (2016)

## Awards and Fellowships

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| ○ <b>Princeton AOS Postdoctoral Fellowship</b>                                    | <b>2022–2024</b>   |
| ○ <i>Atmospheric and Oceanic Sciences Program, Princeton University</i>           |                    |
| ○ <b>Arakawa Symposium Travel Fund</b>                                            | <b>2022</b>        |
| ○ <i>UCAR</i>                                                                     |                    |
| ○ <b>Chinese Government Award for Outstanding Students Abroad</b>                 | <b>2022</b>        |
| ○ <i>China Scholarship Council</i>                                                |                    |
| ○ <b>Best Student Poster Presentation</b>                                         | <b>2022</b>        |
| ○ <i>The 17<sup>th</sup> AMS Conference on Polar Meteorology and Oceanography</i> |                    |
| ○ <b>Edward J. Zipser Award</b>                                                   | <b>2022</b>        |
| ○ <i>Excellence in Graduate Research, University of Utah</i>                      |                    |
| ○ <b>Norihiko Fukuta Memorial Award</b>                                           | <b>2020</b>        |
| ○ <i>Best Graduate Publication, University of Utah</i>                            |                    |
| ○ <b>NASA FINESST Grant</b>                                                       | <b>2019 – 2022</b> |
| ○ <i>Future Investigators in NASA Earth and Space Science and Technology</i>      |                    |
| ○ <b>Student Research &amp; Travel Grant for Interdisciplinary Research</b>       | <b>2019</b>        |
| ○ <i>Global Change and Sustainability Center, University of Utah</i>              |                    |

- **Graduate Student Travel Assistance Award** **2018**  
○ *The Graduate School, University of Utah*
- **The First-Class Scholarship** **2013**  
○ *Nanjing University of Information Science & Technology*
- **Chancellor's Scholarship** **2011**  
○ *Nanjing University of Information Science & Technology*

## Invited Talks

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- Florida State University, Department of Earth, Ocean and Atmospheric Science, "Cloud-Based Arctic Radiation Management in CESM", *July 2026*
- Gordon Research Seminar (Climate Engineering), "What Would an Extreme Mixed-Phase Cloud Thinning (MCT) Scenario Look Like in a Climate Model?", *June 2026*
- UCSD, Scripps Institution of Oceanography, "Cloud-Based Arctic Radiation Management in CESM", *May 2026*
- UCLA, Department of Atmospheric and Oceanic Sciences, "Arctic low clouds modulated by sea ice leads: From observations to large eddy simulations to global climate models", *March 2024*
- Interagency Arctic Research Policy Committee (IARPC), Panel discussion on "Biases in the representation of Arctic clouds and impacts on the surface energy balance", Online, *Nov 2023*
- Princeton University, AOS Atmospheric Dynamics Group, "Open water in sea ice causes high bias in polar low-level clouds in GFDL CM4", *Aug 2023*
- University of Leipzig, Institute for Meteorology, "Arctic low clouds modulated by sea ice leads: From observations to large eddy simulations to global climate models", *Jul 2023*
- Chinese Climate Dynamics Group Weekly Research Seminar, "Midwinter Arctic sea ice leads form and dissipate low clouds", Online, *Apr 2022*
- NOAA GFDL, "Effects of sea ice leads on low-level clouds in the Arctic", Online due to Covid-19, *Feb 2022*
- University of Maryland, Baltimore County, Department of Physics, "Effects of wintertime Arctic sea ice leads on low-level clouds", Online due to Covid-19, *Feb 2021*
- NASA Goddard AeroCenter-Cloud Precipitation Center, "Effects of wintertime Arctic sea ice leads on low-level clouds", Online due to Covid-19, *Feb 2021*
- IARPC (Interagency Arctic Research Policy Committee) Atmosphere Team's meeting, Lighting talk, "Low-level clouds in wintertime Arctic: Lead impacts and radiative forcing", Online due to Covid-19, *Nov 2020*
- Guest lecture at the graduate-level course ATMOS5300 (Atmospheric Thermodynamics & Boundary Layer Processes), "Dry and moist adiabatic lapse rate", *Sep 2020*

## Conferences

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- Gordon Research Conference, *June 2026*, Newry, Maine. “Cloud-Based Arctic Radiation Management in CESM.” X. Li, J. Kok, I. Eisenman, A. Evan [POSTER]
- Degrees Global Forum, *May 2025*, Cape Town, South Africa. “A third cloud geoengineering strategy to manage Earth’s radiation in polar regions.” X. Li, J. Kok, I. Eisenman, A. Evan, L. Zamora, and K. Moore [ORAL]
- EGU, *April 2024*, Vienna, Austria. “Open water in sea ice causes high bias in polar low-level clouds in GFDL CM4.” X. Li, Z. Tan, Y. Zheng, M. Bushuk and L. Donner [ORAL]
- AMS annual meeting, *Jan 2024*, Baltimore, MD. “Open water in sea ice causes high bias in polar low-level clouds in GFDL CM4.” X. Li, Z. Tan, Y. Zheng, M. Bushuk and L. Donner [ORAL]
- Polar Amplification of Climate Change Across Hemispheres and Seasons: Causes and Constraints Workshop, *Jan 2024*, Boulder, CO. “Open water in sea ice causes high bias in polar low-level clouds in GFDL CM4.” X. Li, Z. Tan, Y. Zheng, M. Bushuk and L. Donner [POSTER]
- CFMIP-GASS Meeting, *Jul 2023*, Paris, France. “Open water in sea ice causes high bias in polar low-level clouds in GFDL CM4.” X. Li, Z. Tan, Y. Zheng, M. Bushuk and L. Donner [POSTER]
- A symposium in honor of Professor Akio Arakawa: Modeling Convection, Clouds and Climate Systems, *Oct 2022*, UCLA, CA. “Effects of wintertime Arctic Sea Ice leads on low-level clouds.” X. Li, S. Krueger, C. Strong, G. Mace and S. Benson [ORAL]
- AMS Conference on Polar Meteorology and Oceanography (Collective Madison Meeting), *Aug 2022*, Madison, WI. “Low-level Clouds over Sea Ice Cool the Arctic Climate System in Winter.” X. Li, G. Mace, C. Strong and S. Krueger [POSTER]
- The 3<sup>rd</sup> Pan-GASS Meeting: Understanding and Modeling Atmospheric Processes, *Jul 2022*, Monterey, CA. “Low-level Clouds Cool the Arctic Climate System in Winter.” X. Li, G. Mace, C. Strong and S. Krueger [POSTER]
- Cloud Feedback Model Intercomparison Project (CFMIP) Meeting, *Jul 2022*, Seattle, WA. “Low-level Clouds Cool the Arctic Climate System in Winter.” X. Li, G. Mace, C. Strong and S. Krueger [ORAL]
- AMS Conference on Polar Meteorology and Oceanography, *Jun 2021*, Virtual. “Towards a better low-level cloud retrieval in the Arctic Ocean.” X. Li, G. Mace, S. Krueger, and C. Strong [POSTER]
- AGU Fall Meeting, *Dec 2020*, Virtual. “Relationship between Wintertime Leads and Low Clouds in the Pan-Arctic.” X. Li, S. Krueger, G. Mace, C. Strong, and S. Benson [POSTER]
- Cloud Feedback Model Intercomparison Project (CFMIP) Meeting, *Sep 2020*, Virtual. “Relationship between Wintertime Leads and Low Clouds in the Pan-Arctic.” X. Li, S. Krueger, C. Strong and G. Mace [POSTER]
- CloudSat-CALIPSO Science Team Meeting, *Mar 2020*, Boulder, CO. “Relationship between Wintertime Leads and Low Clouds in the Pan-Arctic.” X. Li, S. Krueger, C. Strong and G. Mace [ORAL]
- GCSC Environment & Sustainability Research Symposium, *Feb 2020*, University of Utah, UT.

- “Effects of Midwinter Arctic Leads on Clouds and the Surface Energy Budget.” X. Li, S. Krueger, C. Strong and G. Mace [POSTER]
- AGU Fall Meeting, *Dec 2019*, San Francisco, CA. “Relationship between Wintertime Leads and Low Clouds in the Pan-Arctic.” X. Li, S. Krueger, C. Strong and G. Mace [ORAL]
- AMS Conference on Polar Meteorology and Oceanography, *May 2019*, Boulder, CO. “Effects of Midwinter Arctic Leads on Boundary Layer Clouds.” Li, X., S. Krueger, C. Strong and G. Mace [ORAL]
- AMS Conference on Cloud Physics, *Jul 2018*, Vancouver, BC. “Effects of Midwinter Arctic Leads on Clouds and the Surface Energy Budget.” X. Li, S. Krueger, C. Strong and G. Mace [POSTER]

## Workshops and Training

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- CESM Tutorial, *Jul 2025*, NCAR
- GradFUTURES Future Faculty series, *Aug 2023*, Princeton University
- AOS Summer Workshop, *Aug 2023*, Princeton University. “Paleo, present, and future: Leveraging the past to understand and predict our changing climate”
- Leadership Development Seminars, *Oct 2021*, University of Utah
- NASA JPL Summer School, *Aug 2020*, Virtual due to Covid-19 “Satellite Observations and Climate Models”
- Three-Minute Thesis Program, *Apr 2020*, Career & Professional Development Center, University of Utah
- Nature Magazine Masterclass (a course designed to help students find more effective techniques and skills for writing high quality manuscripts that meet the standards of journals like Nature), *Apr 2019*, University of Utah
- NCAR Advanced Study Program Summer Colloquium, *Jun 2018*, Boulder, CO. “Synthesis of Observations and Models in Studies of Shallow and Deep Clouds”
- Student Summer Workshop in Earth and Atmospheric Sciences, *Jul 2017*, Chinese University of Hong Kong, Hong Kong, China
- Peking University Summer School on Extremely Heavy Rainfall, *Aug 2016*, Beijing, China
- The 9<sup>th</sup> National Ocean Data Assimilation Seminar, *Dec 2014*, Nanjing, China
- Workshop on Towards Data Assimilation of Physics-Biogeochemistry in the Ocean, *Nov 2014*, Beijing, China
- Winter School on Tropical Ocean Climate and Air-sea Interaction, *Nov 2014*, South China Sea Institute of Oceanology, Guangzhou, China

## Teaching and Mentoring Experience

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- **Teaching Assistant** **Fall 2020**  
     *Atmospheric Thermodynamics & Boundary Layer Processes, University of Utah*

- *Vanessa Maciel (G at UCLA)*  
Research topic: Dust in freezing temperatures  
**Feb 2024 – July 2026**
- *Jan Iyer (UG at Princeton University)*  
Research topic: Cracking Arctic Sea Ice by Weather Patterns  
Awarded funding by ReMatch+ Summer Program at Princeton University  
Won best oral presentation at 2025 AMS annual meeting  
**June 2024 – Feb 2025**
- *Amy Pham (UG at Stanford University)*  
Research topic: Insulating effect of Sea Ice Thickness on Arctic Warming  
Awarded funding by CIMES Research Internship Program at Princeton University & GFDL  
**Summer 2024**

## Professional Service

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- **AGU Global Environmental Change Awards Committee**  
*with Andrew E Dessler, David B Lobell, and Jonathan T Overpeck*  
**Jan 2023 – Jan 2025**
- **USAPECS Board Member**  
*United States members of the Association of Polar Early Career Scientists (APECS)*  
**Sep 2023 – Sep 2024**
- **Co-chair**  
*Chinese Climate Dynamics Group*  
**Jul 2023 – Jul 2024**
- **Steering Committee**  
*ECS & cloud feedback virtual symposia*  
**Mar 2021 – present**
- **Co-chair**  
*Polar Atmospheric Boundary Layer Group, Princeton University*  
**Spring 2023**
- **Member in Princeton Women in Geosciences (PWIGS)**  
*Mentor: Xinning Zhang (Professor); mentee: Moriah A. Kunes (Graduate)*  
Princeton University  
**Sep 2023 – Oct 2024**
- **Student Assistant**  
*The 16<sup>th</sup> Conference on Polar Meteorology and Oceanography*  
**Jun 2021**
- **Student Assistant**  
*The 15<sup>th</sup> Conference on Polar Meteorology and Oceanography*  
**May 2019**
- **Peer reviewer of manuscript**  
*Journal of Advances in Modeling Earth Systems*  
*Journal of Geophysical Research: Atmospheres*  
*Atmospheric Chemistry and Physics*  
*Geophysical Research Letters*  
*Journal of Climate*  
*Communications Earth & Environment*

## Science Communication and Outreach

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| <b>Princeton University</b>                                                                                                                                                                                    | <b>May 2024</b>           |
| ○ <i>Assess undergraduate research (three-minute video &amp; live Showcase)</i><br>and nominate candidates for the Orange & Black Awards on Princeton Research Day                                             |                           |
| <b>Rider University</b>                                                                                                                                                                                        | <b>April 2024</b>         |
| ○ <i>Guest lecture on "Climate Change" for 33 undergraduate students</i><br>with non-science majors   Course: Oceanography                                                                                     |                           |
| <b>Princeton Plasma Physics Laboratory, NJ</b>                                                                                                                                                                 | <b>Mar 2024</b>           |
| ○ <i>Conducting and introducing two hands-on experiments</i><br>(Eddies in a rotating tank & A tornado in a bottle) to seventh to 10th-grade girls<br>(800 attendance) in the Young Women's Conference in STEM |                           |
| <b>Monmouth Junction Elementary School, NJ</b>                                                                                                                                                                 | <b>Feb 2024</b>           |
| ○ <i>Visiting and engaging in discussions with preschool–5th grade children about</i><br>their projects in the 16th annual science fair                                                                        |                           |
| <b>Mercer County Community College, NJ</b>                                                                                                                                                                     | <b>Apr 2023, Dec 2023</b> |
| ○ <i>Lecturing for students in four sub-departments:</i><br>Biology, Chemistry, Plant Science, Hort, and Sustainability, and Physics                                                                           |                           |
| <b>City University of New York</b>                                                                                                                                                                             | <b>Nov 2023</b>           |
| ○ <i>Guest lecture on "Arctic Marine Heatwaves: A Fever in the Icy Sea"</i><br>for first-year graduate students   Course: EES 716 Earth System Science                                                         |                           |