

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

- **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

- **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

- **X. Li** et al. Cloud-based Arctic radiation management in idealize simulations. (*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** et al. Limited climate response to extreme Arctic mixed-phase cloud thinning. (*under review*)
- **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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| ○ Princeton AOS Postdoctoral Fellowship | 2022–2024 |
| ○ <i>Atmospheric and Oceanic Sciences Program, Princeton University</i> | |
| ○ Arakawa Symposium Travel Fund | 2022 |
| ○ <i>UCAR</i> | |
| ○ Chinese Government Award for Outstanding Students Abroad | 2022 |
| ○ <i>China Scholarship Council</i> | |
| ○ Best Student Poster Presentation | 2022 |
| ○ <i>The 17th AMS Conference on Polar Meteorology and Oceanography</i> | |
| ○ Edward J. Zipser Award | 2022 |
| ○ <i>Excellence in Graduate Research, University of Utah</i> | |
| ○ Norihiko Fukuta Memorial Award | 2020 |
| ○ <i>Best Graduate Publication, University of Utah</i> | |
| ○ NASA FINESST Grant | 2019 – 2022 |
| ○ <i>Future Investigators in NASA Earth and Space Science and Technology</i> | |
| ○ Student Research & Travel Grant for Interdisciplinary Research | 2019 |
| ○ <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

- 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

- 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 3rd 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

- 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 9th 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

- **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 – present
- *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

- **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 16th Conference on Polar Meteorology and Oceanography
Jun 2021
- **Student Assistant**
The 15th 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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| Princeton University | May 2024 |
| ○ <i>Assess undergraduate research (three-minute video & live Showcase)</i>
and nominate candidates for the Orange & Black Awards on Princeton Research Day | |
| Rider University | April 2024 |
| ○ <i>Guest lecture on "Climate Change" for 33 undergraduate students</i>
with non-science majors Course: Oceanography | |
| Princeton Plasma Physics Laboratory, NJ | Mar 2024 |
| ○ <i>Conducting and introducing two hands-on experiments</i>
(Eddies in a rotating tank & A tornado in a bottle) to seventh to 10th-grade girls
(800 attendance) in the Young Women's Conference in STEM | |
| Monmouth Junction Elementary School, NJ | Feb 2024 |
| ○ <i>Visiting and engaging in discussions with preschool–5th grade children about</i>
their projects in the 16th annual science fair | |
| Mercer County Community College, NJ | Apr 2023, Dec 2023 |
| ○ <i>Lecturing for students in four sub-departments:</i>
Biology, Chemistry, Plant Science, Hort, and Sustainability, and Physics | |
| City University of New York | Nov 2023 |
| ○ <i>Guest lecture on "Arctic Marine Heatwaves: A Fever in the Icy Sea"</i>
for first-year graduate students Course: EES 716 Earth System Science | |