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## Jaeyeon Lee

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### EMPLOYMENT

2023-present     **Postdoctoral Research Associate**, Princeton University and Geophysical Fluid Dynamics Laboratory, USA  
2016-2023       **Research Assistant**, Seoul National University, South Korea

### DEGREES

2023             **Ph.D. Atmospheric Science, Seoul National University**, Seoul, South Korea  
                    Advisor: Seok-Woo Son  
2018             **M.A. Atmospheric Science, Seoul National University**, Seoul, South Korea  
                    Advisor: Seok-Woo Son  
2015             **B.S. Oceanic Science, Chungnam National University**, Daejeon, South Korea

### RESEARCH INTERESTS

- Midlatitude synoptic and climate dynamics
- Extratropical cyclones and storm track dynamics
- Dynamics of precipitation extremes, droughts, and hydroclimate variability
- Weather-climate scale interactions

### HONORS & AWARDS

2023             **Outstanding Poster Presentation, The 103rd American Meteorological Society Annual Meeting**  
2020             **Merit-based scholarship, Seoul National University**  
2019             **Merit-based scholarship, Seoul National University**  
2019             **Outstanding Student Paper Award, 2019 Korean Meteorological Society Fall Meeting**  
2016             **Outstanding Student Paper Award, 2016 Korean Meteorological Society Fall Meeting**

### TEACHING & MENTORING

Undergraduate Research Assistant for:

(SNU internship program) Kyoungjun Lee, Joonsuk M. Kang, Donghyun Kim, Deok-Gyu Yoon

(GFDL and CIMES internship program) Jessica Hampson

Teaching Experiences:

2020             **Teaching Assistant**, Large Scale Dynamics  
2017             **Teaching Assistant**, Weather Forecasting  
2016             **Teaching Assistant**, Atmospheric Physics I

### ADDITIONAL PROFESSIONAL ACTIVITIES

Visiting research student at McGill University (March-April 2018), hosted by John R. Gyakum

Reviewer for:

*Climate Dynamics, Geoscience Letters, Earth's Future, Atmosphere-Ocean, Atmospheric Chemistry and Physics, GFDL internal review, International Journal of Climatology, Journal of the Meteorological Society of Japan*

**SKILLS**

Programming:

Python, IDL, C-shell, Bash Shell, Perl, Fortran

Scientific Computing and Climate Data Analysis:

Application of Lagrangian cyclone tracking algorithm using climate models and reanalysis datasets

Development of algorithms to extract cyclone-related surface weather impacts, including precipitation, extreme winds, and moisture transport

Experience analysing large-ensemble, high-resolution Earth System Model simulations (GFDL SPEAR and CMIP)

Experience processing multi-terabyte datasets using HPC environments

**PUBLICATIONS**

H-index 5, cumulative citations 130 (Google Scholar, Feb 2026).

***In Preparation***

Lee, J., X. Yang, and E. K. M. Chang, **Extratropical Cyclone-Driven Resolution Sensitivity of U.S. Precipitation Biases in GFDL SPEAR Models**, in preparation.

Joh, Y., T. L. Delworth, S.-W. Yeh, Y.-O. Kwon, J. Lou, J. Lee, and Y.-G. Park, **Winter Northern Hemisphere Storm Tracks Predict Summer Atmospheric Aridity in the South-Central U.S.**, in preparation

***Under Review***

He, S., E. K. M. Chang, C. Zheng, J. Lee, and X. Yang, **Revealing Weekly-Scale Drivers of North American Winter Storm Track Variability Using a Causal Discovery Framework**, *Journal of Climate*, under review.

Zhang, L., H. Murakami, T. L. Delworth, V. Koul, A. Ross, C. Stock, X. Yang, J. Lee, A. Wittenberg, and Z. Li, **Predicting Accelerated Flooding Along the U.S. Southeast Coast Post-2010: The role of Atlantic Meridional Overturning Circulation**, *Nature Communications Earth & Environment*, under review.

***Published***

Ryu, J., Lee, J., and Y. You, 2025: **A Distinct Type of Heavy Rainfall with Large Raindrops over Extratropical Regions Revealed by 10 Years of GPM Spaceborne Radar Measurements**, *International Journal of Applied Earth Observation and Geoinformation*, 144, 104879.

Lee, J., X. Yang, E. K. M. Chang, H. Murakami, and W. F. Cooke, 2025: **Sensitivity of Northern Hemisphere Extratropical Cyclone Properties to Atmospheric Resolution in the GFDL SPEAR Model**, *Journal of*

*Climate*.

Yoon, H., Son, S. W., Lee, J., Kim, H. S., Liu, C., An, S. I., Kug, J. S., Min, S. K., and Yeh, S. W., 2025: **Asymmetric response of the Western North Pacific tropical cyclone genesis to symmetric CO2 pathway**, *npj Climate and Atmospheric Science*, 8(1), 208.

Zhang, G., C. Azorin-Molina, D. Chen, M. Tim, J. A. Guijarro, K. Deng, L. Minola, J. Lee, S.-W. Son, P. Shi, 2024: **Variability of near-surface wind speed over the Tibetan Plateau: the role played by westerly and Asian monsoon**, *Advances in Climate Change Research*, 15(3), 525-536.

Lee, J., J. Hwang, S.-W. Son, and J. R. Gyakum, 2022: **Future changes of East Asian cyclones in the CMIP5 models**, *Journal of Climate*, 1-23.

Kim, D., J. Lee, J. M. Kang, and S.-W. Son, 2021: **Synoptic Structures and Precipitation Impact of Extratropical Cyclones Influencing on East Asia Megacities: Seoul, Beijing, Tokyo** (in Korean). *Atmosphere*, 31(1), 45-60.

Lee, J., S.-W. Son, H.-O. Cho, J. Kim, D.-H. Cha, J. R. Gyakum, and D. Chen, 2020: **Extratropical cyclones over East Asia: Climatology, seasonal cycle, and long-term trend**. *Climate Dynamics*, 54, 1131–1144.

Kang, J. M., J. Lee, S.-W. Son, J. Kim, and D. Chen, 2020: **The rapid intensification of East Asian cyclones around the Korean Peninsula and their surface impacts**. *Journal of Geophysical Research*, 125, e2019JD031632.

Lee, J., J. Kim, and S.-W. Son, 2016: **Climatic features of extratropical cyclones during the spring-time yellow dust events in Korea** (in Korean). *Atmosphere*, 26, 565-576.

## **CONFERENCE PRESENTATIONS**

2025	<b>EGU25</b> (oral)
	<b>The 104th AMS Annual Meeting</b> (oral); <b>NOAA week 3-4/S2S webminar series</b> (virtual);
2024	<b>AGU24</b> (poster)
2023	<b>The 103rd AMS Annual Meeting</b> (poster)
2022	<b>EGU General Assembly</b> (oral)
2020	<b>EGU General Assembly</b> (oral)
	<b>The 27th IUGG General Assembly</b> (poster); <b>SRC climate change workshop</b> (oral);
2019	<b>KMS fall meeting</b> (poster)
2018	<b>SPARC General Assembly 2018</b> (poster); <b>KMS fall meeting</b> (poster)
2017	<b>ACM 2017</b> (poster); <b>KSCC spring meeting</b> (oral)
2016	<b>KMS fall meeting</b> (poster); <b>Short-lived climate pollutants workshop</b> (oral)
2015	<b>KMS fall meeting</b> (poster); <b>KMS spring meeting</b> (poster)

## **DEPARTMENT SEMINARS**

2023	<b>Stony Brook University</b>
2022	<b>GFDL seminar</b>