
Jaeyeon Lee

Tel: (609) 937-3510
E-mail:
jaeyeon.lee@noaa.gov
jl8071@princeton.edu

GFDL/NOAA
201 Forrestal Road
Princeton University Forrestal Campus
Princeton, NJ 08540 USA

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
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)

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

DEPARTMENT SEMINARS

2023	Stony Brook University
2022	GFDL seminar