Cathrene Lagare

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Education

Tohoku University, Japan *September 2025*
PhD Geophysics
- Supervisor: Dr. Takeshi Yamazaki, Co-advisors: Dr. Junshi Ito and Dr. Giuseppe Torri
- Jointly Supervised Degree with University of Hawai'i at Manoa
- Atmospheric Science Group

Tohoku University, Japan *2022*
MSc Geophysics
- Supervisor: Dr. Takeshi Yamazaki, Co-advisor: Dr. Junshi Ito
- Atmospheric Science Group

Ateneo de Davao University, Philippines *2018*
BSc Environmental Sciences, Minor in Sociology

Research and Work Experience

Postdoctoral Fellow *Sendai, Japan*
Atmospheric Science Group, Department of Geophysics, Tohoku University *October 2025 - Present*
- Multiscale interactions between midlatitude cold-air outbreaks and tropical mesoscale convective systems during the Northern Hemisphere winter
- Japan Society for the Promotion of Science (JSPS) Fellowship (Change from DC to PD category)

Visiting PhD Student *Honolulu, HI, USA*
Department of Atmospheric Sciences, University of Hawai'i at Manoa *2023 - 2025*
- Research on the development of cold surge vortices over the Maritime Continent (Hosted by Dr. Giuseppe Torri)

Research Assistant *Quezon City, Philippines*
Regional Climate Systems Laboratory, Manila Observatory *2019-2020*
- Research on multi-scale characteristics of TC activities in the Western North Pacific under the Southeast Asia Regional Climate Downscaling/Coordination Initiative for Climate Downscaling/Coordinated Regional Climate Downscaling Experiment for Southeast Asia (SEACLID/CORDEX-SEA) project

Professional Service

Chapter Scientist *January 2026 - Present*
Intergovernmental Panel on Climate Change (IPCC), AR7, WGI, Chapter 4

Publications

4. **Lagare, C.**, Ito, J., Torri, G., & Yamazaki, T., Cold surge vortices and their relation to tropical heavy rainfall during MJO. *In Preparation*
3. **Lagare, C.**, Ito, J., Yamazaki, T., & Torri, G. Seasonal characteristics of mesoscale convective systems over the Philippines. *Under Revision*
2. **Lagare, C.**, Yamazaki, T., & Ito, J. (2023). Numerical simulation of a heavy rainfall event over Mindanao, Philippines, on 03 May 2017: mesoscale convective systems under weak large-scale forcing. Geoscience Letters, 10(1), 23.
1. **Lagare, C.**, Coronel, R., Cruz, F., Narisma, G. T., Villafuerte, M., & Tibay, J. (2022). Impacts of planetary boundary layer parameterization in RegCM4. 7 on the intensity and structure of simulated tropical cyclones over the Philippines. Climate Dynamics, 59(9), 2915-2928.

Honors and Awards

Young Leaders Overseas Program (Overseas Research Grant), Tohoku University (若手リーダー海外派遣プログラム)	*2026*
American Geoscience Union (AGU) Outstanding Student Presentation Award	*2024*
DC2 Japan Society for the Promotion of Science (JSPS) Research Fellow	*2025*
The International Joint Graduate Program in Earth and Environmental Sciences (GP-EES) Research Grant of Tohoku University, Japan	*2021-2025*
Monbukagakusho Scholarship (MEXT)	*2020-2022*
29th Bank of the Philippine Islands Foundation and the Department of Science and Technology, Philippines (BPI-DOST) Science Awardee	*2018*

Selected Conference and Workshop Presentations

- **Lagare, C.**, Ito, J., Torri, G., Yamazaki, T., (2025, December) Cold surge vortices, heavy rains, and the MJO: A study in the Maritime Continent. Poster presentation at the American Geophysical Union Meeting (AGU), USA.
- **Lagare, C.**, Ito, J., Torri, G., Yamazaki, T., (2025, November) Cold surge vortices, heavy rains, and the MJO: A study in the Maritime Continent. Poster presentation at the 7th International Workshop on Nonhydrostatic Models (NHM-WS 2025), Japan.
- **Lagare, C.**, Ito, J., Torri, G., Yamazaki, T., (2025, August) Cold Surge Vortices and Their Relation to Tropical Heavy Rainfall During MJO. Poster presentation at the IX Convection Permitting Climate Modeling (CPCM) Workshop, Hong Kong.
- **Lagare, C.**, Ito, J., Torri, G., Yamazaki, T., (2025, May) Cold Surge Vortex Dynamics and Their Impact on Tropical Heavy Rainfall During MJO. Poster presentation at the Japan Geoscience Union Meeting (JpGU), Japan.
- **Lagare, C.**, Ito, J., Torri, G., Yamazaki, T., (2024, December) Cold Surge Vortices and Their Relation to Tropical Heavy Rainfall During MJO. Poster presentation at the American Geophysical Union Meeting (AGU), USA.
- **Lagare, C.**, Yamazaki, T., Ito, J. (2024, July) Climatological Characteristics of Mesoscale Convective Systems in the Philippines. Poster presentation at the 4th Workshop on Convective Organization and Precipitation Extremes (WCO4), Italy.
- **Lagare, C.**, Yamazaki, T., Ito, J. (2024, May) Climatological Characteristics of Mesoscale Convective Systems in the Philippines. Oral presentation at the Japan Geoscience Union Meeting (JpGU), Japan.
- **Lagare, C.**, Yamazaki, T., Ito, J. (2023, August) Mesoscale Convective Systems Under Weak Large-Scale Conditions over Mindanao, Philippines. The 6th International Workshop on Nonhydrostatic Models (NHM-WS2023)., Japan.
- **Lagare, C.**, Yamazaki, T., Ito, J. (2023, May) A Case Study of a Heavy Rainfall Event Associated with Mesoscale Convective Systems under Weak Large-Scale Conditions over Mindanao, Philippines. Oral presentation at the Japan Geoscience Union Meeting (JpGU), Japan.
- **Lagare, C.**, Yamazaki, T., Ito, J. (2023, April) Characteristics of Mesoscale Convective Systems in the Philippines. Poster presentation at the European Geoscience Union Meeting (EGU), Austria.
- **Lagare, C.**, Yamazaki, T., Ito, J. (2022, May) Numerical Simulation of Heavy Rainfall over Mindanao, Philippines. Poster presentation at the Japan Geoscience Union (JpGU) Meeting 2022, Japan.
- **Lagare, C.**, Coronel, R. (2019, July) Numerical Simulations of Heavy Rainfall and Streamflow over Davao City,Philippines: A Baseline Study for the Development of a Hydro-Meteorological Flood Forecasting System. Poster presentation at the 16th Annual Meeting of the Asia Oceania Geosciences Society (AOGS), Singapore.

Skills

Languages: Python, Bash (intermediate). CDO/NCO, Fortran, NCL (basic)

Models: WRF, RegCM