Danyao Wu

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EDUCATION

The Ohio State University — Columbus, Ohio, USA
Ph.D., Atmospheric Science — 08/2024-present

Ocean University of China (OUC) — Qingdao, China
Bachelor of Science in Atmospheric Science — 09/2020-06/2024
Undergraduate Thesis: *Comparative Analysis of Single-Year and Multi-Year La Nina Evolution Characteristics*
Honors: 2022-2023 OUC Third Class Scholarship
       2020-2021 OUC Scholarship for Excellence in Student Activities

PUBLICATION

Fan, X., **Wu, D.**, Zhao, Y., Deng, Y., Fu, G. (2023) "Characteristics of Clouds Associated with an Explosive Cyclone over the Northwestern Pacific Ocean," *Climate Change Research Letters*, 12, 1089.

Wu, D. (2023) "History, Mechanisms, and Future Directions of the El Niño-Southern Oscillation under the Severe Climate Change." *2024 3rd International Forum on Mathematical Statistics, Physical Sciences and Telecommunication System (IFMPT 2024).* Brussels, Belgium. 6-7 January 2024.

RESEARCH

Evaluation of the Coordinated Impact of South China Sea Summer Monsoon (SCSSM) and El Niño-Southern Oscillation (ENSO) on the Indian Ocean Dipole (IOD) Using piControl Experiment Results — Qingdao, China
Group Member, Instructed by Prof. Yazhou Zhang, OUC — 05/2023 - 05/2024

- Analyzed SCSSM, ENSO, and IOD interactions using 500 years of CESM2 model data, examining climate indices and oceanic variables.
- Computed partial correlations, conducted regression analysis, and visualized key patterns in MATLAB.
- Concluded that CESM2 slightly underestimates SCSSM-IOD correlation compared to ENSO-IOD and identified physical mechanisms driving IOD development.

Characteristics of Clouds Associated with Explosive Cyclones over the Northwestern Pacific Ocean — Qingdao, China
Student Research Developing Program, Group Member, Instructed by Prof. Gang Fu, OUC — 05/2022 – 05/2023

- Collected and analyzed physical variables, satellite cloud images, and cloud microphysical data from ECMWF, MODIS, and CloudSat for 24 explosive cyclone cases, selecting 3 for detailed study.
- Used Python and GrADs to extract cyclone positions, central intensity, and generate key visualizations, including pseudo-equivalent potential temperature and atmospheric pressure evolution.
- Summarized macro and micro characteristics of explosive cyclones, analyzed movement trajectories and cloud-top temperatures, and created a comparative table of cloud features across different cyclone phases.

PROJECTS

Climate Vulnerability and Resilience Based on Global Atmosphere Circulation — Online
7 weeks' Online Project-based Learning, Instructed by Prof. Alan Plumb, MIT — 06/2023 – 08/2023

Study of the Characteristics of Super Typhoon Mangkhut (1820) — Qingdao, China
Individual Assignment for Course Marine Meteorology, Instructed by Prof. Gang Fu, OUC — 11/2022

INTERNSHIP

Shenzhen Academy of Environmental Sciences — Shenzhen, China
Intern, Atmosphere Institute — 07/2022 – 08/2022

Guangdong-Hong Kong-Macao Greater Bay Area Weather Research Center for Monitoring Warning and Forecasting (Shenzhen Institute of Meteorological Innovation) — Shenzhen, China
Intern, Research & Development Department — 08/2021 – 09/2021