Yu-Cian Tsai | Curriculum Vitae

Ph.D. Candidate
Department of Atmospheric Science, Colorado State University, U.S.
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Research Interests

Madden Julian Oscillation, Climate Dynamics, Climate Extreme Events, Climate Changes Under Global Warming, Tropical Waves, Intraseasonal Variability, Tropical Cyclone Genesis

Education

Ph.D. Atmospheric Science, Colorado State University, U.S. 08/2023-present
Advisor: Eric D. Maloney

M.S. Atmospheric Science, National Central University, Taiwan 09/2019-06/2021
Advisor: Jia-Yuh Yu
GPA: 4.27/4.3

B.S. Atmospheric Science, National Central University, Taiwan 09/2015-06/2019

Relevant Experiences

Publication

[1] **Y.-C. Tsai** and E. D. Maloney, 2025: Representation of East Pacific Easterly Waves in Subseasonal-to-Seasonal Forecasts of the Unified Forecast System. *J. Adv. Modeling. Earth Sys.* https://doi.org/10.22541/essoar.176487389.90544519/v1

[2] **Y.-C. Tsai**, E. D. Maloney, D. Kim, and S. J. Camargo, 2025: Unified Forecast System Model Prediction of the Madden-Julian Oscillation and Its Influence on East Pacific During Boreal Summer. *Journal of Geophysical Research: Atmospheres*, 130, e2024JD042904. https://doi.org/10.1029/2024JD042904

[3] Chang, C. J., M. Lo, W. Tseng, **Y.-C. Tsai,** and J. Yu, 2024: Impact of Deforestation in the Maritime Continent on the Madden–Julian Oscillation. *J. Climate*, 37, 2247–2261, https://doi.org/10.1175/JCLI-D-22-0746.1

[4] Li, J.-L. F., Xu, K.-M., **Y.-C. Tsai,** Lee, W.-L., Jiang, J. H., Yu, J.-Y., et al., 2023: Evaluation of radiatively active frozen hydrometeors mass in CMIP6 global climate models using CloudSat-CALIPSO observations. *Journal of Geophysical Research: Atmospheres*, 128, e2023JD039200. https://doi.org/10.1029/2023JD039200

[5] Li, J.-L. F., Xu, K.-M., Lee, W.-L., Jiang, J. H., **Y.-C. Tsai,** Yu, J.-Y., et al., 2023: Warm clouds biases in CMIP6 models linked to indirect effects of falling ice-radiation interactions over the tropical and subtropical Pacific. *Geophysical Research Letters*, 50, e2023GL104990. https://doi.org/10.1029/2023GL104990

[6] **Y.-C. Tsai,** Li, J.-L., K.-M. Xu, W.-L. Lee, J. H. Jiang, E. J. Fetzer, J.-Y. Yu, 2023: Possible linkage of sea surface height anomaly, surface wind stress and sea surface temperature with the falling ice radiative effects under a gradual warming scenario. *Environ. Res. Commun*., doi:10.1088/2515-7620/acee4c

[7] **Y.-C. Tsai** and J.-Y. Yu, 2023: Contrasting the Energy Recharge-Discharge Cycle between Propagating and Eastward-decaying Madden-Julian Oscillation Events. *Climate Dynamics,* https://doi.org/10.1007/s00382-023-06711-z

[8] Li, J.-L., W.-L. Lee, K.-M. Xu, **Y.-C. Tsai**, J. H. Jiang, J.-Y. Yu, G. Stephens, E. J. Fetzer, W.-T. Chen, 2023: Radiatively Active Hydrometeors Frequencies from CloudSat-CALIPSO Data for Evaluating Cloud Fraction in

Global Climate Models, *Journal of Geophysical Research: Atmospheres*, 128, e2023JD038511. https://doi.org/10.1029/2023JD038511

[9] Li, J.-L., **Y.-C. Tsai**, K.-M. Xu, W.-L. Lee, J. H. Jiang, J.-Y. Yu, E. J. Fetzer, G. Stephens, 2022: Inferring the Linkage of Sea Surface Height Anomalies, Surface Wind Stress and Sea Surface Temperature with the Falling Ice Radiative Effects Using Satellite Data and Global Climate Models. *Environ. Res. Commun*., doi: 10.1088/2515-7620/aca3fe.

[10] Li, J.-L., K.-M. Xu, W.-L. Lee, J. H. Jiang, **Y.-C. Tsai**, E. J. Fetzer, G. Stephens, Y.-H. Wang, and J.-Y. Yu, 2022: Comparing surface wind stress and sea surface temperature biases over the tropical and subtropical oceans in subsets of CMIP6 models categorized by frozen hydrometeors-radiation interactions. *Environ. Res. Commun*., doi:10.1088/2515-7620/ac70ac.

Posters and Presentations

Upcoming: AMS Tropical, **2026**

Summer School: The Dynamical Core Model Intercomparison Project (DCMIP) **2025**

Poster (first-author): American Meteorological Society **(**AMS) Annual Meeting, **2025**

Topic "Unified Forecast System Model Prediction of the Madden-Julian Oscillation and East Pacific Teleconnections During Boreal Summer"

Poster (first-author): Asia Oceania Geosciences Society (AOGS) Annual Meeting, **2023**

Topic "Contrasting the Energy Recharge-Discharge Cycle between Propagating and Eastward-decaying Madden-Julian Oscillation Events"

Poster (first-author): Atmospheric Sciences Discipline Annual Meeting (Taiwan), **2023**

Poster (Co-author): AGU Fall Meeting, **2022**

Topic: "How Local Processes Related to Deforestation in the Maritime Continent Influence the MJO"

Poster (Co-author): AOGS Annual Meeting (Virtual), **2022**

Oral: Taiwan Geosciences Assembly, **2022**

Oral: Atmospheric Science Postgraduate Student Conference (Virtual), **2021**

Poster: Climate Hotpot in Action Forum and Year of Maritime Continent Workshop (Virtual), **2021**

Honors and Awards

William Gray Tropical Meteorology Award (CSU), **2025**

ATS ASCENT International Research Experience Scholarship (CSU) **2025**

2023-2025 Ministry of Education Study Abroad Scholarship (Taiwan), **2023**

DR. CHIA CHOU Thesis Diploma Award (Taiwan), **2022**

First Prize, Atmospheric Science Postgraduate Student Conference (Taiwan), **2021**

Representative of the graduates in the department of Atmospheric Science (NCU), **2021**

Honorable Mention, NCU X Hiroshima University Independent Research Competition, **2019**

Work Experience

National Central University **Taoyuan City, Taiwan**

Department of Atmospheric Science 08/2021-07/2023

Research Assistant: Data analysis & Conducting research projects and preparing scientific paper

Summer Internship

Center Weather Bureau **Taipei City, Taiwan**
Meteorological Information Center 06/2018-08/2018
- evaluate the regional wind speed from numerical weather prediction (NWP) models
- analyze the possible reasons causing the extreme rainfall forecast bias

Teaching Experience

National Central University **Taoyuan City, Taiwan**
Department of Atmospheric Science 08/2019-07/2021
Teaching Assistant: Lecturer of NCL Tutorial in NCU Climate Research Project Course