

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

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>

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>

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>

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>

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](https://doi.org/10.1088/2515-7620/acee4c)

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>

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>

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](https://doi.org/10.1088/2515-7620/aca3fe).

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](https://doi.org/10.1088/2515-7620/ac70ac).

Posters and Presentations

<u>Upcoming:</u> AMS Tropical,	2026
<u>Summer School:</u> The Dynamical Core Model Intercomparison Project (DCMIP)	2025
<u>Poster (first-author):</u> 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 ”	
<u>Poster (first-author):</u> Asia Oceania Geosciences Society (AOGS) Annual Meeting,	2023
Topic “Contrasting the Energy Recharge-Discharge Cycle between Propagating and Eastward-decaying Madden-Julian Oscillation Events”	
<u>Poster (first-author):</u> Atmospheric Sciences Discipline Annual Meeting (Taiwan),	2023
<u>Poster (Co-author):</u> AGU Fall Meeting,	2022
Topic: “ How Local Processes Related to Deforestation in the Maritime Continent Influence the MJO ”	
<u>Poster (Co-author):</u> AOGS Annual Meeting (Virtual),	2022
<u>Oral:</u> Taiwan Geosciences Assembly,	2022
<u>Oral:</u> Atmospheric Science Postgraduate Student Conference (Virtual),	2021
<u>Poster:</u> 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
<i>Department of Atmospheric Science</i>	08/2021-07/2023
Research Assistant: Data analysis & Conducting research projects and preparing scientific paper	

Summer Internship

Center Weather Bureau	Taipei City, Taiwan
<i>Meteorological Information Center</i>	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

