Kai-Chih Tseng (Kai)

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Education and Professional Training

2019 – Postdoc - Princeton University/NOAA Geophysical Fluid Dynamics Laboratory
Advisor: Dr. Nat Johnson

2016 – 2019 Ph.D. in Atmospheric Science - Colorado State University, U.S.A.
Advisors: Dr. Elizabeth Barnes, Dr. Eric Maloney
Graduated with Distinguished Honor and finish degree within 3 years

(2014 Sep – 2015 Oct : in Military Service)

2008 – 2014 B.S. and M.S. in Atmospheric Science - National Taiwan University, Taipei, Taiwan
Advisor: Dr. Chung-Hsiung Sui
GPA – B.S./M.S. 3.96/4.00 (out of 4.00 scale)
Graduated with College Honors (top 5% in BS and MS)

Publications

1. **Tseng K.-C**., and co-authors: The atmospheric river in a warming climate: trend and variability (in preparation)
2. **Tseng K.-C**., N. C. Johnson., and Sarah B. Kapnick: The deterministic bias of atmospheric river seasonal prediction by optimal initial SST pattern (in preparation)
3. **Tseng K.-C**., N. C. Johnson and S. B. Kapnik : Seasonal forecast of atmospheric river with GFDL-Seamless System for Prediction and Earth System Research (SPEAR) model (to be submitted)
4. **Tseng K.-C**., E. A. Barnes and E. D. Maloney : Identifying the predictability source on S2S timescales with Deep Learning. (in preparation)
5. Barnes, E. A., and co-authors(**Tseng K.-C**): Physical-guided prediction of atmospheric rivers with machine learning algorithm. (in preparation)
6. Bohar Singh, Eric D. Maloney and **K.-C. Tseng**., : The influence of Tropospheric QBO on Madden-Julian Oscillations Teleconnections. (in preparation)
7. **Tseng K.-C**., N. Johnson., E. A. Barnes, E. D. Maloney, and Sarah B. Kapnick: Mapping red-noise climate variability to hydrological extreme: an application of linear inverse model. (to be submitted)
8. **Tseng K.-C**., E. A. Barnes, and E. D. Maloney, : The important role of the MJO for extratropical variability in observations and the CMIP5 climate models (submitted)
9. **Tseng K.-C**., E. A. Barnes, and E. D. Maloney, : The importance of past MJO activity in determining the future state of midlatitude circulation *J. Climate*
10. **Tseng K.-C**., E. D. Maloney and E. A. Barnes, : The consistency of MJO teleconnection patterns on interannual timescales (minor revision)

11. **Tseng K.-C.**, E. D. Maloney, and E. A. Barnes, 2018: Explaining the consistency of MJO teleconnection patterns with linear Rossby wave theory, *J. Climate*, **32**, 531–548.

12. **Tseng K.-C.**, E. A. Barnes, and E. D. Maloney, 2018: Prediction of the midlatitude response to strong Madden-Julian oscillation events on S2S timescales, *Geophys. Res. Lett.*, **45**, 463–470.

13. **Tseng K.-C.**, C.-H. Sui., and T. Li, 2015: Moistening Processes of MJO events during DYNAMO/CINDY, *J. Climate*, **28**, 3041–3057.

Honors and Awards

2019	Alumni Award (distinguished honor with best Ph.D. paper)	Colorado State University
2018	Shrake-Culler Scholarship (outstanding academic record)	Colorado State University
2016	Program of Research and Scholarly Excellence	Colorado State University
2014	Deans Award, (distinguished honor with best M.S. thesis)	National Taiwan University
2011 – 2015	International Research Fellowship	National Taiwan University
2012	Deans Award, top 5% of undergraduate students	National Taiwan University
2012	NICAM workshop Traveling Grant (the only undergraduate recipient)	University of Tokyo
2009 – 2011	Presidential Award, top 5% of the semester	National Taiwan University
2009 – 2010	Hsu Shui-Sen Fellowship (GPA=4.0)	Changhua County, Taiwan

Conference Presentations

1. **Tseng K.-C.**, E. A. Barnes and E. D. Maloney, 2019 : The importance of past MJO activity in determining the future state of extratropical circulations, AGU [poster]

2. **Tseng K.-C.**, E. A. Barnes and E. D. Maloney, 2018 : Explaining the consistency of MJO teleconnection patterns with linear Rossby wave theory, Second International Conference on Subseasonal to Seasonal Prediction (S2S) and Second International Conference on Seasonal to Decadal Prediction (S2D) [poster]

3. **Tseng K.-C.**, E. A. Barnes and E. D. Maloney, 2017 : Prediction of North Pacific Height Anomalies During Strong Madden-Julian Oscillation Events, AGU Fall Meeting [oral]

4. **Tseng K.-C.**, E. A. Barnes and E. D. Maloney, 2017 : Forecasting North Pacific Height Anomalies with the MJO on S2S timescales , 30th Conference on Climate Variability and Change/24th Conference on Probability and Statistics in the Atmospheric Sciences/16th Conference on Artificial Intelligence and its Applications to the Environmental Sciences [oral]

5. **Tseng K.-C.**, and C.-H. Sui, 2016 : Moistening Process in Observed and Simulated MJOs during DYNAMO/CINDY-(cumulus properties diagnosis), 32nd Conference on Hurricanes and Tropical Meteorology [oral]

6. **Tseng K.-C.**, and C.-H. Sui, 2014A Diagnosis of Boundary Layer Moistening Processes for Madden-Julian Oscillations During DYNAMO IOP, 31st Conference on Hurricanes and Tropical Meteorology, AMS, 6B.C [oral]

Reviewer Experience

1. Journal of Climate

2. npj, Climate and Atmospheric Science (Nature)

3. Geophysical Research Letter

4. JGR-Atmosphere

5. Climate Dynamics
6. Advances in Atmospheric Sciences
7. Monthly Weatehr Review