Yi-Hsuan Chen (陳毅軒)

Postdoctoral Research Associate.
Program in Atmospheric and Oceanic Sciences
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EDUCATION

Ph.D., University of Michigan, United States 2015 - 2019
- Major in Climate Sciences in the Department of Climate and Space Sciences and Engineering
- Dissertation: Influences of Surface Spectral Emissivity and Cloud Longwave Scattering on Climate Simulations
- Adviser: Professor Xianglei Huang
- GPA: 3.99 on 4.0 scale

M.S. in Atmospheric Sciences, National Taiwan University, Taiwan 2009 - 2012
- Thesis: An improved Precipitation Scheme in Cumulus Parameterization
- Adviser: Professor Jen-Ping Chen
- GPA: 3.86 on 4.0 scale

B.S. in Atmospheric Sciences, National Central University, Taiwan 2005 - 2009
- Ranked No. 2 in the class
- GPA: 3.85 on 4.0 scale

RESEARCH INTERESTS

Cloud and radiation processes in the climate system
Cloud and radiation parameterizations
Climate modeling and diagnostics

EMPLOYMENT

Postdoctoral Research Associate 2020 - present
Program in Atmospheric and Oceanic Sciences, Princeton University, United States
- Study atmospheric turbulence and cloud process in Earth system models
- Mentors: Dr. Leo Donner and Dr. Ming Zhao

Graduate Student Research Assistant 2015 - 2019
Department of Climate and Space Sciences and Engineering, University of Michigan, United States

Research Assistant 2013 - 2015
Research Center for Environmental Changes, Academia Sinica, Taiwan
- Assisted to develop the cloud and radiation modules for the Taiwan Earth System Model (TaiESM), which is based on the NCAR Community Earth System Model (CESM).
- Mentors: Dr. Chein-Jung Shiu, Professor Ming-Dah Chou, and Professor Jen-Ping Chen

TEACHING EXPERIENCE

Graduate Student Instructor Winter 2018
University of Michigan, United States
- Served in an undergraduate course, CLIMATE 102: Extreme Weather, and was responsible for 180 students.
- Recognized as an Honorable Mention for the 2019 Towner Prize for Outstanding Graduate Student Instructors.

Teaching Assistant 2010
National Taiwan University, Taiwan
- Served in an undergraduate course, Introduction to Atmospheric Chemistry, and was responsible for 50 students.

AWARDS and HONORS

Government Scholarship to Study Abroad, Ministry of Education, Republic of China (Taiwan) 2017
Rackham International Students Fellowship/Chia-Lun Lo Fellowship, Rackham Graduate School, University of Michigan 2016
Dean's Fellowship, College of Engineering, University of Michigan 2015
Student Award of Excellence, Department of Atmospheric Sciences, National Central University, Taiwan 2006 & 2007

PEER-REVIEWED JOURNAL PUBLICATIONS

1. Kuo, C.-P., P. Yang, X. L. Huang, **Y.-H. Chen**, and G. Liu, 2020: Assessing the accuracy and efficiency of longwave radiative transfer models involving scattering effect with cloud optical property parameterizations. *J. Quant. Spectrosc. Radiat. Transf.*, 240, 106683, doi:10.1016/j.jqsrt.2019.106683.
2. **Chen, Y.-H.**, X. L. Huang, X. H. Chen, and M. Flanner, 2019: The Effects of Surface Longwave Spectral Emissivity on Atmospheric Circulation and Convection over the Sahara and Sahel, *Journal of Climate*, **32**, 4873-4890, doi:10.1175/JCLI-D-18-0615.1

SELECTED CONFERENCE PRESENTATIONS

1. **Chen, Y.-H.**, X. Huang, C.-P. Kuo, X. Chen, and P. Yang, 2019: A Missing Physics in Climate Models for the simulation of Southern Ocean: Longwave Radiative Coupling between Surface and Atmosphere, 2019 Fall Meeting, American Geophysical Union, San Francisco, United States. Poster presentation.
2. **Chen, Y.-H.**, X. Chen, C.-P. Kuo, X. Huang and P. Yang, 2018: The Role of Surface Emissivity and Ice Cloud Longwave Scattering on Simulated Climate in the Arctic, 2018 Fall Meeting, American Geophysical Union, Washington D.C., United States. Poster presentation.
3. **Chen, Y.-H.**, C.-P. Kuo, X. Huang and P. Yang, 2017: The Influence of Cloud Longwave Scattering together with a state-of-the-art Ice Longwave Optical Parameterization in Climate Model Simulations, 2017 Fall Meeting, American Geophysical Union, New Orleans, United States. Poster presentation.
4. **Chen, Y.-H.**, X. Chen, X. Huang and M. G. Flanner, 2016: The Effects Of Surface Longwave Emissivity On Atmospheric Circulation And Convection At Sahara And Sahel Regions, 2016 Fall Meeting, American Geophysical Union, San Francisco, United States. Poster presentation.
5. **Chen, Y.-H.**, C.-J. Shiu, W.-T. Chen, T. Hashino, J.-L. F. Li, I.-C. Tsai, J.-P. Chen, and H.-H. Hsu, 2014: Incorporation of a Two-Moment Warm Cloud Microphysics Scheme into Deep Cumulus Parameterization

of NCAR Community Atmosphere Model, 14th Conference on Cloud Physics, American Meteorological Society, Boston, United States. Poster presentation.

6. Shiu, C.-J., **Y.-H. Chen**, W.-T. Chen, T. Hashino, J.-L. F. Li, I.-C. Tsai, J.-P. Chen, and H.-H. Hsu, 2014: Implementation of a Two-Moment Cloud Microphysics Parameterization for Stratiform Clouds of NCAR CESM, 14th Conference on Cloud Physics, American Meteorological Society, Boston, United States. Poster presentation.
7. **Chen, Y.-H.** and J.-P. Chen, 2011: An Improved Precipitation Scheme in Cumulus Parameterization, XXV International Union of Geodesy and Geophysics (IUGG) General Assemblies, Melbourne, Australia. Oral presentation.