HING ONG (A.K.A. HENG WANG)

Curriculum Vitae Updated on Nov 19, 2020

EDUCATION

PhD University at Albany, State University of NY, Atmospheric Sciences 2020
Dissertation: "The significance of the nontraditional Coriolis terms in tropical large-scale dynamics"

MS National Taiwan University, Atmospheric Sciences 2016
Thesis: "Effects of artificial local compensation of convective mass flux in the cumulus parameterization"

BS National Taiwan University, Atmospheric Sciences 2014

PUBLICATIONS

Journal Publications

2020 **Ong, H.**, Comments on "On the structure and formation of UTLS PV dipole/jetlets in tropical cyclones by convective momentum surges" *Mon. Weather Rev.*, *148*(11), 4693–4695.

2020 **Ong, H.**, & Roundy, P. E., The compressional beta effect: Analytical solution, numerical benchmark, and data analysis. *J. Atmos. Sci.*, *77*(11), 3721–3732.

2020 **Ong, H.**, & Roundy, P. E., Nontraditional hypsometric equation. *Q. J. R. Meteorol. Soc.*, *146*(727), 700–706.

2019 **Ong, H.**, & Roundy, P. E., Linear effects of nontraditional Coriolis terms on intertropical convergence zone forced large-scale flow. *Q. J. R. Meteorol. Soc.*, *145*(723), 2445–2453.

2017 **Ong, H.**, Wu, C. M., & Kuo, H. C., Effects of artificial local compensation of convective mass flux in the cumulus parameterization. *J. Adv. Model. Earth Syst.*, *9*(4), 1811–1827.

Journal Paper(s) in Progress

Skamarock, W. C., **Ong, H.**, & Klemp, J. B., A fully compressible nonhydrostatic deep-atmosphere-equations solver for MPAS. *Mon. Weather Rev.*, in review.

HONORS AND AWARDS

2020 to 2022 **Climate and Global Change Postdoctoral Fellowship**, NOAA (declined)

2019 to 2020 **Government Scholarship to Study Abroad**, Ministry of Education, Taiwan

2019 **Poster Presentation Award**, Annual Meeting, AMS

2014 **Dean's Award**, College of Science, National Taiwan University

CONFERENCE PRESENTATIONS AND INVITED LECTURES (SELECTED)

Conference Presentations

2021 "The significance of the nontraditional Coriolis terms in tropical large-scale dynamics," AMS Conference on Hurricanes and Tropical Meteorology, New Orleans, LA, oral, May 13.

2020 "The compressional beta-effect: Analytical solution, numerical benchmark, and data analysis," AGU Fall Meeting, online, poster, Dec 14.

2019 "The significance of the nontraditional Coriolis terms in tropical large-scale dynamics," AGU Fall Meeting, San Francisco, CA, poster, Dec 12.

2019 "The significance of the nontraditional Coriolis terms in tropical large-scale dynamics," Northeast Tropical Workshop, Dedham, MA, oral, Jun 3.

2019 "Scaling for the nontraditional Coriolis terms in diabatic-forced dynamics," AMS Annual Meeting, Phoenix, AZ, poster, Jan 7.

2019 "Ertel potential vorticity charging in the tropical atmosphere," AMS Annual Meeting, Phoenix, AZ, oral, Jan 7.

2018 "Ertel potential vorticity charging in the tropical atmosphere," AGU Fall Meeting, Washington, DC, poster, Dec 13.

2016 "Hybrid mass flux cumulus scheme (HYMACS) as a step to unified cumulus parameterization and its application to tropical cyclone intensity prediction," AMS Conference on Hurricanes and Tropical Meteorology, San Juan, PR, oral, Apr 22.

Invited Lectures

2020 "The significance of the nontraditional Coriolis terms in tropical large-scale dynamics," Department of Land, Air and Water Resources, University of California, Davis, CA, Feb 24.

2020 "The significance of the nontraditional Coriolis terms in tropical large-scale dynamics," Research Center for Environmental Changes, Academia Sinica, Taipei, Taiwan, Jan 10.

2020 "The significance of the nontraditional Coriolis terms in tropical large-scale dynamics," Department of Atmospheric Sciences, National Taiwan University, Taipei, Taiwan, Jan 9.

2019 "The significance of the nontraditional Coriolis terms in tropical large-scale dynamics," Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology, Cambridge, MA, Oct 30.

2019 "The significance of the nontraditional Coriolis terms in tropical large-scale dynamics," Mesoscale and Microscale Meteorology Laboratory, National Center for Atmospheric Research, Boulder, CO, Jul 25.

2019 "The significance of the nontraditional Coriolis terms in tropical large-scale dynamics," Central Weather Bureau, Taipei, Taiwan, Jun 20.

2018 "Ertel potential vorticity charging and scaling for the nontraditional Coriolis term," Department of Atmospheric Sciences, National Taiwan University, Taipei, Taiwan, Jun 26.

RESEARCH EXPERIENCE

Postdoctoral Scholar, University of California, Davis — 2020 to present
Supervisor: Da Yang

PhD Researcher, University at Albany, State University of NY — 2017 to 2020
Advisor: Paul E. Roundy
- Formulated a numerical idealized circulation model
- Analyzed rawinsonde and reanalysis data
- Derived analytical equatorial wave solutions
- Developed a benchmarking test for model dynamics
- Adapted the model dynamics of MPAS model

Research Assistant, National Taiwan University — 2016 to 2017
Supervisor: Hung-Chi Kuo
- Participated in a scientific planning group in a field experiment
- Composed a progress report

MS Researcher, National Taiwan University — 2014 to 2016
Advisor: Chien-Ming Wu and Hung-Chi Kuo
- Formulated a cumulus parameterization scheme
- Adapted the model dynamics and physics of WRF model

TEACHING EXPERIENCE

Teaching Assistant, University at Albany, State University of NY — 2018 to 2020
- Applications of Subseasonal to Seasonal Dynamics
- Ocean Science
- Water and Climate Change
- Atmospheric Dynamics

Teaching Assistant, National Taiwan University — 2014 to 2016
- Lab. of Synoptic Meteorology (Lecturer)
- Fluid Mechanics
- Program and Scientific Computing

PROFESSIONAL SERVICE

Peer-Reviewed Articles for:
- Geophysical Research Letters
- Monthly Weather Review
- Journal of Geophysical Research: Atmospheres
- Journal of Atmospheric Sciences

LANGUAGES

English: Professionally proficient

Chinese Mandarin: Native (my official name, Heng Wang)

Taiwanese Hokkien: Native (my preferred name, Hing Ong)

SKILLS

Model Formulation: using partial differential equations

Model Development: using Fortran or Matlab

Data Analysis: using Fortran, Matlab, NCL, or Grads

RESEARCH INTERESTS

Geophysical Fluid Dynamics

Earth System Modeling