

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

Curriculum Vitae

Updated on Oct 8, 2020

## EDUCATION

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<b>PhD</b>	University at Albany, State University of NY, Atmospheric Sciences Dissertation: “The significance of the nontraditional Coriolis terms in tropical large-scale dynamics”	2020
<b>MS</b>	National Taiwan University, Atmospheric Sciences Thesis: “Effects of artificial local compensation of convective mass flux in the cumulus parameterization”	2016
<b>BS</b>	National Taiwan University, Atmospheric Sciences	2014

## PUBLICATIONS

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### Journal Publications

- 2020 **Ong, H.**, Comment on “On the Structure and Formation of UTLS PV Dipole/Jetlets in Tropical Cyclones by Convective Momentum Surges.” *Mon. Wea. Rev.*, accepted.
- 2020 **Ong, H.**, & Roundy, P. E., The compressional beta-effect: Analytical solution, numerical benchmark, and data analysis. *J. Atmos. Sci.*, accepted.
- 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. Wea. Rev.*, in review.

## **HONORS AND AWARDS**

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- 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)**

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### **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

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**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

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| <b>Teaching Assistant</b> , University at Albany, State University of NY<br>Applications of Subseasonal to Seasonal Dynamics<br>Ocean Science<br>Water and Climate Change<br>Atmospheric Dynamics | 2018 to 2020 |
| <b>Teaching Assistant</b> , National Taiwan University<br>Lab. of Synoptic Meteorology (Lecturer)<br>Fluid Mechanics<br>Program and Scientific Computing  | 2014 to 2016 |

## PROFESSIONAL SERVICE

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

## LANGUAGES

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- English:** Professionally proficient
- Chinese Mandarin:** Native (my official name, Heng Wang)
- Taiwanese Hokkien:** Native (my preferred name, Hing Ong)

## SKILLS

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- Model Formulation:** using partial differential equations
- Model Development:** using Fortran or Matlab
- Data Analysis:** using Fortran, Matlab, NCL, or Grads

## RESEARCH INTERESTS

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- Geophysical Fluid Dynamics**
- Earth System Modeling**