CURRICULUM VITAE

**Kun Gao, Ph.D.** April 2018

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## PROFESSIONAL EXPERIENCE

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| 2016 May – present | Postdoctoral Research Associate in the Program of Atmospheric and Oceanic Sciences, Princeton University. |
| 2015 Sep – 2016 Apr | Postdoctoral Fellow at Graduate School of Oceanography, University of Rhode Island. |
| 2010 Sep – 2015 Aug | Research Assistant at Graduate School of Oceanography, University of Rhode Island. |

## EDUCATION

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| 2015 | Ph.D. in Oceanography<br>University of Rhode Island, Narragansett, RI. |
| 2009 | B.S. in Marine Sciences<br>Ocean University of China, Qingdao, China. |

## PUBLICATIONS IN PROCESS

1. Gao, K., J.-H. Chen, L. Harris and S.-J. Lin, 2018: Predicting monthly hurricane activity over North Atlantic, to be submitted to *Geophysical Research Letters*.

2. Gao, K., J.-H. Chen, L. Harris, S.-J. Lin, and A. Hazelton, 2018: Improving the hurricane structure simulation in AGCM by the two-way nesting approach, to be submitted to *Journal of Advances in Modeling Earth Systems*.

## REFERRED PUBLICATIONS

1. Gao, K. and I. Ginis, 2018: On the characteristics of linear-phase roll vortices under a moving hurricane boundary layer. *J. Atmos. Sci*., in press.

2. Gao, K., J.-H. Chen, L.M. Harris, S.-J. Lin, B. Xiang and M. Zhao, 2017: Modulation of tropical cyclones over the Gulf of Mexico and west Caribbean by the Madden-Julian Oscillation in GFDL HiRAM. *J. Geophys. Res. - Atmos*., 122, 13125-13137. doi:10.1002/2017JD027756. **(Highlighted by JGR and EoS)**

3. Gao, K., I. Ginis, J. Doyle and Y. Jin, 2017: Effect of boundary layer roll vortices on the development of an axisymmetric tropical cyclone. *J. Atmos. Sci*., 74, 2737-2759. doi:10.1175/JAS-D-16-0222.1.

4. Zhang, S., Y. Luo, L. Rothstein., and K. Gao, 2016: A numerical investigation of the interannual-to-interpentadal variability of the along-shelf transport in the Middle Atlantic Bight. *Continental Shelf Research*, 122, 14-28. doi:10.1016/j.csr.2016.03.022.

5. Gao, K. and I. Ginis, 2016: On the equilibrium-state roll vortices and their effect in the hurricane boundary layer. *J. Atmos. Sci*., 73, 1205-1222. doi:10.1175/JAS-D-15-0089.1.

6. Gao, K. and I. Ginis, 2014: On the generation of roll vortices due to the inflection point instability of the hurricane boundary layer flow. *J. Atmos. Sci*., 71, 4292-4307. doi:10.1175/JAS-D-13-0362.1.

7. Gao, K., X. Chen, H. Yu and S. Zhang, 2010: The influence of internal tides on the diagnostic calculation of geostrophic currents in Luzon Strait. *Journal of Ocean University of China*, 40, 9-16.

## SEMINARS AND CONFERENCE PRESENTATIONS

2018 *Hurricanes in regional-refined GFDL HiRAM: Inner-core Structure and Subseasonal prediction.* AMS 33th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL.

2017 *Toward skillful sub-seasonal prediction of North Atlantic hurricanes with regionally-refined GFDL HiRAM.* AGU Fall Meeting, New Orleans, LA.

2017 *Experimental sub-seasonal prediction of North Atlantic hurricanes using the GFDL HiRAM.* AMS 30th Conference on Climate Variability and Change, 24th Conference on Probability and Statistics in the Atmospheric Sciences, and the 16th Conference on Artificial Intelligence and its Applications to the Environmental Sciences, Baltimore, MD.

2017 *Toward skillful sub-seasonal prediction of North Atlantic hurricanes.* Seminar at NOAA/Geophysical Fluid Dynamics Laboratory, Princeton, NJ.

2017 *Modulation effect of MJO on Tropical Cyclones in Gulf of Mexico: GFDL HiRAM Simulation.*
AMS 97th Annual Meeting, Seattle, WA.
NOAA/Geophysical Fluid Dynamics Laboratory Poster Expo, Princeton, NJ.

2016 *Effect of boundary layer roll vortices on the structure and intensity of the hurricane.*
Department of Environmental Science, Rutgers University, New Brunswick, NJ.
AMS 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR.

NOAA/Geophysical Fluid Dynamics Laboratory, Princeton, NJ.

2015 *How do the boundary layer roll vortices affect the hurricane?* 7th Northeast Tropical Workshop, MIT Endicott House, MA.

2014 *Interactions between roll vortices and large-scale flow in the hurricane boundary layer.* AMS 31st Conference on Hurricanes and Tropical Meteorology, San Diego, CA.

2013 *On the generation of roll vortices due to the inflection point instability in the hurricane boundary layer.* AMS 19th Conference on Atmospheric and Oceanic Fluid Dynamics, Newport, RI.

2012 *On the generation of roll vortices in idealized hurricane boundary layer.* AMS 20th Symposium on Boundary Layers and Turbulence, Boston, MA.

2012 *A numerical study of roll vortices in the hurricane boundary layer.* AMS 30th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL.

## COMPUTER SKILLS

Computer Languages: Python, Matlab, Fortran, Linux Shell

Numerical Models: Regional Hurricane Prediction Systems (COAMPS®, HWRF);
Hurricane Boundary Layer - Roll Vortex Model (self-developed);
NOAA/GFDL FV3 and HiRAM

## AWARDS

2013 URI Robert & Marjorie Fillmore Scholarship

2014, 2012 URI Graduate School of Oceanography Alumni Award for Travels

## SERVICES

- Serve as a reviewer for the following journals: *1) Nature Communications, 2) Geophysical Research Letters, 3) Journal of Atmospheric Sciences, 4) Atmospheric Chemistry and Physics, 5) Journal of Advances in Modeling Earth Systems, 6) Journal of Climate, 7) Climate Dynamics, 8) Dynamics of Atmospheres and Oceans, 9) Atmosphere*
- Member of Department of Energy Earth System Model Development and Analysis Initiative review panel (2018).