Dr. Xiaomin Chen

NRC Postdoctoral Research Associate
NOAA/AOML/Hurricane Research Division

4301 Rickenbacker Causeway, Miami, FL 33149
Email: xiaomin.chen@noaa.gov

RESEARCH INTERESTS

Tropical cyclones genesis, intensity change, and precipitation

Boundary layer meteorology

Mesoscale Meteorology

Doppler Radar meteorology

Numerical Modeling

WORKING EXPERIENCE

2018.11-present, NOAA/AOML/HRD, NRC Postdoctoral Research Associate

2015.8-2018.11, Nanjing University, Postdoctoral Research Assistant

EDUCATION

2010.9-2015.6, Nanjing University, Ph.D. in Meteorology

2012.9-2014.9, University of Hawaii at Manoa, Visiting Student

2006.9-2010.6, Nanjing University, B.S. in Atmospheric Sciences

FUNDED PROJECT

1. On Rapid Intensification (RI) of Typhoons in the Monsoon Trough over South China Sea. National Natural Science Foundation of China, 2017-2019 (PI)
2. Toward Improved Understanding on Rapid Intensification (RI) of Tropical Cyclones. Fundamental Research Funds for the Central Universities, 2016-2017 (PI)

AWARDS & HONORS

2018	National Research Council (NRC) Postdoctoral Fellowship *NOAA/AOML/HRD*
2017	Outstanding Postdoctoral Fellow *Nanjing University*
2015	Outstanding PhD Graduates (top 10% graduates schoolwide) *Nanjing University*
2014	National Scholarship (top 0.2% students nationwide) *Ministry of Education of China*
2013	Guanghua Scholarship for Graduate Student *Nanjing University*
2012-2014	Student Exchange Program Scholarship *Ministry of Education of China*
2011	Outstanding Leadership in Graduate Student Association *Nanjing University*
2008-2009	National Innovation Fellowship *National Innovation Experiment Program for University Students*

PUBLICATIONS

Peer-reviewed

1. **Chen, X.**, J. A. Zhang, F. D. Marks, 2019: A thermodynamic pathway leading to rapid intensification of tropical cyclones in shear. *Geophys. Res. Lett.*, 46, 9241–9251.
2. **Chen, X.**, M. Xue, and J. Fang, 2018b: Rapid intensification of Typhoon Mujigae (2015) under different sea surface temperatures: Structural changes leading to rapid intensification. *J. Atmos. Sci.*, 75, 4313-4335.
3. **Chen, X.**, Y. Wang, J. Fang, and M. Xue, 2018a: A numerical study on rapid intensification of Typhoon Vicente (2012) in the South China Sea. Part II: Inner-core processes. *J. Atmos. Sci.,* 75, 235-255.
4. Wu D., K. Zhao, M. Kumjian, **X. Chen,** and coauthors, 2018: Kinematics and microphysics of convection in the outer rainband of Typhoon Nida (2016) revealed by polarimetric Radar. *Mon. Wea. Rev.,* 146, 2147-2159.
5. **Chen, X.**, Y. Wang, K. Zhao, and D. Wu, 2017: A numerical study on rapid intensification of Typhoon Vicente (2012) in the South China Sea. Part I:

Verification of simulation, storm-scale evolution and environmental contribution. *Mon. Wea. Rev.*, 145, 877-898.

6. **Chen, X.**, Y. Wang, and K. Zhao, 2015: Synoptic flow patterns and large-scale characteristics associated with rapidly intensifying tropical cyclones in the South China Sea. *Mon. Wea. Rev.*, 43, 64-87.
7. **Chen, X.**, K. Zhao, W.-C. Lee, B. Jong-Dao Jou, M. Xue, and P. R. Harasti, 2013: The improvement to the environmental wind and tropical cyclone circulation retrievals with the modified GBVTD (MGBVTD) technique. *J. Appl. Meteor. Climatol.*, 52, 2493-2508.
8. Zhao, K., M. Wang, M. Xue, P. Fu, Z. Yang, **X. Chen**, Y. Zhang, W. Lee, F. Zhang, Q. Lin, and Z. Li, 2017: Doppler radar analysis of a tornadic miniature supercell during the Landfall of Typhoon Mujigae (2015) in South China. *Bull. Amer. Meteor. Soc.*, 98, 1821-1831.
9. Zhu. W., K., K. Zhao, **X. Chen**, M. Wang, Separation of the environmental wind and typhoon by extended-hurricane volume velocity processing method. *Journal of Nanjing University (National Sciences)*, 2010, 46(3), 243-253.

Submitted articles

1. **Chen, X.**, J. A. Zhang, F. D. Marks, R. F. Rogers, and J. J. Cione, 2019: Thermodynamic control of precipitation symmetrization and rapid Intensification of tropical cyclones under shear. *J. Atmos. Sci.*, submitted.
2. Cione J. J., G. H. Bryan, R. Dobosy, J. A. Zhang, G. Boer, A. Aksoy, J. B. Wadler, E. A. Kalina, B. A. Dahl, K. Ryan, J. Neuhaus, Ed Dumas, F. D. Marks, A. M. Farber, T. Hock, and **X. Chen,** 2019: Eye of the storm: Observing hurricanes with a small unmanned aircraft system, *Bull. Amer. Meteor. Soc., submitted.*
3. Wu, D., F. Zhang, **X. Chen**, A. Ryzhkov, K. Zhao, and M. R. Kumjian, 2019: Evaluation of Microphysics Schemes in Tropical Cyclones using Polarimetric Radar Observations: Convective Precipitation in Outer Rainband. *Mon. Wea. Rev.*, submitted.

SELECTED CONFERENCES & SEMINARS

2019 A Thermodynamic Pathway Leading to Rapid Intensification of Tropical Cyclones under Shear (Invited)
AMS 18th Conference on Mesoscale Processes, Savannah, US

2019 Physical Processes Leading to Rapid Intensification of Tropical Cyclones in Vertical Wind Shear (Invited)

MMM Seminar, National Center for Atmospheric Research

2018 Structural Changes Leading to Rapid Intensification of Tropical Cyclones under Different Sea Surface Temperatures (invited)
Pennsylvania State University, US

2018 The Role of Downshear Reformation in the Rapid Intensification of Typhoon Vicente (2012) (invited)
14th AOGS Annual Meeting, *Honolulu, US*

2018 Evaluation of Vertical Eddy Diffusivity in the Planetary Boundary Layer Schemes of WRF model (invited)
Shanghai Typhoon Institute, China

2016 The Role of Monsoon Trough on the Rapid Intensification of Typhoon Vicente (2012) in South China Sea (poster)
32nd Conference on Hurricanes and Tropical Meteorology, San Juan, US

2015 Asymmetric Rapid Intensification of A Tropical Cyclone (invited)
The 8th China-Korea Joint Workshop on Tropical Cyclones, Shanghai, China

2014 Synoptic Flow Patterns and Large-Scale Characteristics Associated with Rapidly Intensifying Tropical Cyclones in the South China Sea (invited)
31st Conference on Hurricanes and Tropical Meteorology, San Diego, US

2013 Synoptic Flow Patterns and Large-Scale Characteristics Associated with Rapidly Intensifying Tropical Cyclones in the South China Sea (poster)
University of Hawaii at Manoa, Hawaii, US

TEACHING

2018 Fall	Instructor, Nanjing University *Introduction to Earth Sciences & Environmental resources (undergraduate course)*
2018 & 2016 Fall	Instructor, Nanjing University *Tropical Meteorology (graduate course)*