

Biographical Sketch:

Ping Zhu

Department of Earth and Environment, Florida International University

11200 SW 8th ST, Miami, FL, 33199

Tel: 305-348-7096, Fax: 305-348-1761,

E-mail: zhup@fiu.edu, Web page: <http://faculty.fiu.edu/~zhup/>

Education:

Ph.D., Atmospheric Science, RSMAS, University of Miami, 1998 - 2002

M.S., Atmospheric Science, Chinese Academy of Meteor. Sci., 1985 - 1988

B.S., Atmospheric Science, Nanjing University, China, 1981 - 1985

Professional Employment:

Associate Professor, 2012 – present, Dept. of Earth and Environment,
Florida International University

Assistant Professor, 2006 – 2012, Dept. of Earth and Environment,
Florida International University

Postdoctoral Researcher, 2004 - 2006, Climate and Global Dynamics Division,
National Center for Atmospheric Research

Postdoctoral Researcher, 2002 - 2004, Department of Atmospheric Sciences,
University of Washington

Research Assistant, 1997 - 2002, Rosenstiel School of Marine and Atmospheric
Science, University of Miami

Visiting Scholar, 1996 - 1997, Institute of Geosciences, University of
Tsukuba, Japan

Teacher, 1988 - 1996, Beijing Meteorological Institute, P. R. China

Publications:

Zhu, P. 2015: On the vertical transport in the moist convection. *J. Atmos. Sci.*, under reviewing.

Li, Z-J., P. Zuidema, **P. Zhu**, 2015: Simulated convective invigoration processes at trade-wind cumulus cold pool boundaries, *J Atmos. Sci.*, under reviewing.

Kandel, H., A. Melesse, and **P. Zhu**, 2015: Radar reflectivity based convective rainfall change in south Florida: An implied effect of land use/land cover change, *Hydrological Processes*, under reviewing.

- Zhu, Z.-D., and **P. Zhu**, 2015: Sensitivity of eyewall replacement cycle to model physics, vortex structure, and background winds, *J. Geophys. Res.*, DOI: 10.1002/2014JD022056
- Varble A., E. J. Zipser, A. M. Fridlind, **P. Zhu**, A. S. Ackerman, J.-P. Chaboureau, J. Fan, A. Hill, B. Shipway, and C. Williams, 2014: Evaluation of cloud-resolving and limited area model intercomparison simulations using TWP-ICE observations. Part 2: Rain microphysics, *J. Geophys. Res.*, **119(24)**, 13,919-13,945, DOI: 10.1002/2013JD021372
- Varble, A., E. J. Zipser, A. M. Fridlind, **P. Zhu**, A. S. Ackerman, J.-P. Chaboureau, S. Collis, J. Fan, A. Hill, and B. Shipway, 2014: Evaluation of cloud-resolving and limited area model intercomparison simulations using TWP-ICE observations. Part 1: Deep convective updraft properties, *J. Geophys. Res.*, 119(24), 13,891-13,918, DOI: 10.1002/2013JD021371
- Zhu, Z.-D., and **P. Zhu**, 2014: The role of outer rainband convection in governing the eyewall replacement cycle in numerical simulations of tropical cyclones, *J. Geophys. Res.*, **119**, 8049–8072, doi:10.1002/2014JD021899.
- Tamay M. O., F. J. Beron-Vera, Darek Bogucki, S.S. Chen, C. Dawson, W. Dewar, A. Griffa, B. K. Haus, A. C. Haza, H. Huntley, M. Iskandarani, G. Jacobs, B. Jagers, A.D. Kirwan, N. Laxague, B. Lipphart, J. MacMahan, A. J. Mariano, J. Olascoaga, G. Novelli, A. C. Poje, A.J.H.M. Reniers, J. M. Restrepo, B. Rosenheim, E H. Ryan, C. Smith, A. Soloviev, S. Venkataramani, G-C. Zha, **P. Zhu**, 2014: Research Overview of the Consortium for Advanced Research on Transport of Hydrocarbon in the Environment (CARTHE), *2014 International Oil Spill Conference proceeding*, May 2014, Vol. 2014, No. 1, pp. 544-560.
- Li Z-J, P. Zuidema, and **P. Zhu**, 2014: Simulated convective invigoration processes at trade-wind cumulus cold pool boundaries. *J Atmos. Sci.*, **71** p.2823-2841. doi:10.1175/JAS-D-13-0184.1
- Zhu, P.**, and J. Furst, 2013: On the parameterization of surface momentum transport via drag coefficient in low wind conditions. *Geophys. Res. Lett.*, **40**, doi:10.1002/grl.50518.
- Zhu, P.**, K. Menelaou, Z.-D. Zhu, 2013: Impact of sub-grid scale vertical turbulent mixing on eyewall asymmetric structures and mesovortices of hurricanes. *Quart. J. Roy. Meteor. Soc.*, doi:10.1002/qj.2147
- Petch, J., A. Hill, L. Davies, A. Fridlind, C. Jakob, Y.-L. Lin, S.-C. Xie, **P. Zhu**, 2013: Evaluation of intercomparisons of four different types of model simulating TWP-ICE. *Quart. J. Roy. Meteor. Soc.*, DOI: 10.1002/qj.2192.
- Wang D.-H., **P. Zhu**, J.-F. Yin, X. F. Li, W.-K. Tao, 2013: Effects of vertical wind shear, radiation, and ice clouds on precipitation distributions during a landfall of severe tropical storm Bilis (2006). *Terr. Atmos. Oce.*, 24/3, 383-392, doi:10.3319/TAO.2013.01.11.02(A).
- Wang, D-H, Y. Liu, **P. Zhu**, J.-F. Yin, X.-F. Li, and W.-K. Tao., 2013: Cloud microphysical budget associated with torrential rainfall during the landfall of

severe tropical storm Bilis (2006). *Acta Meteor. Sinica*, 27, 263-272, doi: 10.1007/s13351-013-0210-z.

- Zhu, P.**, J. Dudhia, P. R. Field, K. Wapler, A. Fridlind, A. Varble, E. Ziper, J. Petch, M. Chen, Z.-D. Zhu, 2012: A limited area model (LAM) intercomparison study of a TWP-ICE active monsoon mesoscale convective event. *J. Geophys. Res.*, VOL. 117, D11208, 21 PP., doi:10.1029/2011JD016447.
- Zhang A. J., **P. Zhu**, F. J. Masters, R. R. Rogers, and F. D. Marks, 2011: On momentum transport and dissipative heating during hurricane landfalls. *J. Atmos. Sci.*, **68**, 1397-1404.
- Zhu, P.**, B. A. Albrecht, V. P. Ghate, Z.-D., Zhu, 2010: Multiple scale simulations of stratocumulus clouds. *J. Geophys. Res.*, **115**, D23201, doi:10.1029/2010JD014400.
- Zhu, P.**, J. A. Zhang, and F. J. Masters, 2010: Wavelet analyses of turbulence in the hurricane surface layer during landfalls. *J. Atmos. Sci.*, **67**, 3793-3805.
- Zhu, P.** and P. Zuidema, 2009: On the use of PDF schemes to parameterize sub-grid clouds. *Geophysical Research Letters*, **36**, L05807, doi:10.1029/2008GL036817.
- Zhu, P.**, 2008: Impact of land surface roughness on surface winds during hurricane landfall. *Quart. J. Roy. Meteor. Soc.*, **134**, 1051-1057. DOI: 10.1002/qj.265.
- Zhu, P.**, 2008: A multiple scale modeling system for coastal hurricane wind damage mitigation. *Natural Hazards*, **47**, 577-591. DOI: 10.1007/s11069-008-9240-8.
- Zhu, P.**, 2008: Simulation and parameterization of the turbulent transport in the hurricane boundary layer by large eddies. *J. Geophys. Res.*, **113**, D17104, doi:10.1029/2007JD009643.
- Zhu, P.**, W. Zhao 2008: Parameterization of continental boundary layer clouds. *J. Geophys. Res.*, **113**, D10201, doi:10.1029/2007JD009315.
- Zhu, P.**, J. J. Hack, J. T. Kiehl, and C. S. Bretherton, 2007: Climate sensitivity of tropical and subtropical marine low cloud amount to ENSO and global warming due to doubled CO₂. *J. Geophys. Res.*, **112**, D17108, doi:10.1029/2006JD008174.
- Zhu, P.**, J. Hack, J. Kiehl, 2007: Diagnosing cloud feedbacks in general circulation models. *J. Climate*, **20**, 2602-2622.
- Zhu, P.**, C. Bretherton, M. Kohler, A. Cheng, A. Chlond, Q. Geng, P. Austin, J.-C. Golaz, G. Lenderink, A. Lock, B. Stevens, 2005: Intercomparison and interpretation of single Column model simulations of a nocturnal stratocumulus topped marine boundary layer. *Mon. Wea. Rev.*, **133**, 2741-2758.
- Stevens, B., C.-H., Moeng, A. S. Ackerman, C. Bretherton, A. Chlond, S. De Roode, J. Edwards, J.-C., Golaz, H. Jiang, M. Khairoutdinov, M. P. Kirkpatrick, D. C. Lewellen, A. Lock, F. Muller, D. E. Stevens, E. Whelan, **P. Zhu**, 2005: Evaluation of large-eddy simulations via observations of nocturnal marine stratocumulus. *Mon. Wea. Rev.*, **133**, 1443-1462.
- Zhu, P.** and C. Bretherton, 2004: A simulation study of shallow moist convection and its impact on the atmospheric boundary layer. *Mon. Wea. Rev.*, **132**, 2391-2409.

- Zhu, P.** and B. A. Albrecht, 2003: Large eddy simulations of continental shallow cumulus convection. *J. Geophys. Res.*, **108**, No.D15, 4453, doi:10.1029/202JD003119.
- Zhu, P.** and B. A. Albrecht, 2002: A theoretical and observational analysis on the formation of fair-weather cumuli. *J. Atmos. Sci.*, **59**, 1983-2005.
- Zhu, P.** and B. A. Albrecht, 2002: Formation of fair-weather cumuli. *Bull. Amer. Meteor. Soc.*, **83**, 856-857.
- Zhu, P.** and B. A. Albrecht, and J. Gottschalck, 2001: Formation and development of nocturnal boundary layer clouds over the southern Great Plains. *J. Atmos. Sci.*, **58**, 1409-1426.
- Zhu, P.** and R. B. Jiang, 1996: Comparing the characteristics of PBL among oasis, desert and gobi. *Meteorological Monthly*, **22**, No.3, 48-50 (in Chinese).
- Wang, Q. and **P. Zhu**, 1995: Analysis of nighttime drainage wind in Heihe region. *J. Meteor. Soc. Japan*, **73**, 1285-1291.
- Zhu, P.** and R. B. Jiang, 1995: Numerical study of oscillation phenomena in radiation fog. *Scientia Atmospherica Sinica*, **19**, 234-241 (in Chinese).
- Wang, Q., **P. Zhu**, and B. Z. Wang, 1995: Study of the characteristics of the low level jets and the nighttime drainage winds in Heihe region. *Plateau Meteorology*, **14**, No.3, 257-263 (in Chinese).
- Jiang, R. B., **P. Zhu**, B. Z. Wang, 1995: Analyses of characteristics of turbulence during a mesoscale storm system. *Meteorological Monthly*, **12**, No.4, 11-15 (in Chinese).
- Jiang, R. B., **P. Zhu**, and B. Z. Wang, 1994: An analysis of characteristics of surface layer turbulence in Tongxian. *J. Beijing Meteor. Institute*, No.1, 16-19 (in Chinese).
- Zhu, P.**, X. J. Xu, and X. S. Li, 1992: A numerical study of the second-order turbulent moments in the stable stratified nocturnal boundary layer. *Adv. Atmos. Sci.*, **9**, 201-212.
- Miao, M. Q., M. Zhao, Y. C. Wang, and **P. Zhu**, 1987: The calculation of the turbulent fluxes in surface boundary layer and the study of several models of wind profiles in the tower layer. *Scientia Atmospherica Sinica*, **11**, 420-429 (in Chinese).

Honors and Awards:

- 1994 Outstanding College Teacher Award by Beijing High Education Department
- 2003-2004 Smith Prize for the most original piece of research in a Ph.D. dissertation by RSMAS, University of Miami
- 2009 NSF Early CAREER award

Research Projects:

Principle Investigator, NOAA, *Understanding the impact of sub-grid scale physics in HWRF on the predicted inner-core structure and intensity of tropical cyclones, 2014-2016*

Co- Principle Investigator, GoMRI, *Consortium for Advanced Research on Transport of Hydrocarbon in the Environment (CARTHE)*, 2009-2014.

Principle Investigator, NSF CAREER, *Investigation and Parameterization of Hurricane Boundary Layer Processes for Improving Hurricane Forecast and Mitigation.* 2009-2014.

Principle Investigator, DOE-ASR, *ARM Observations for the Development and Evaluation of Models and Parameterizations of Cloudy Boundary Layers.* 2009-2012.

Principle Investigator, NSF, *From Fine-Scale Mixing to the Mesoscale--Assessing the Climatic Impact of Trade-Wind Cumulus with RICO Data and Modeling.* 2007-2010,

Principle Investigator, NOAA Florida Hurricane Alliance Round 2, *Hurricane structures and predictions.* 2006 - 2009.

Principle Investigator, NOAA Florida Hurricane Alliance Round 3, *Effect of Surface Roughness on Wind Dynamics of Landfalling Hurricanes.* 2006 - 2009.

Panel and Science Committee:

DOE, ASR, 2010 Cloud Life Cycle

DOE, BER, 2011 Climate Modeling Program

NSF Arctic Observing Network (AON) Program

Review:

National Science Foundation

DOE

NOAA

Journal of Geophysical Research

Geophysical Research Letter

Monthly Weather Review

Journal of Atmospheric Sciences

Weather and Forecasting

Quarterly Journal of the Royal Meteorological Society

Atmospheric Chemistry and Physics

Atmospheric Research

Journal of Applied Meteorology and Climatology

Journal of Atmospheric and Oceanic Technology
Advances in Atmospheric Sciences
Pearson Publisher

Teaching:

Undergraduate

Meteorological Instrumentation and Observations, MET4400, 2009 Fall, 2011 Spring,
2012 Fall

Oceanography, OCE3014, 2010 Fall

Calculations for the Atmospheric Sciences, MET4993, 2010 Spring, 2013 Spring

Dynamic Meteorology I, MET4301, 2006 Fall, 2007 Fall, 2008 Fall, 2009 Fall,

General Meteorology, MET3003, 2008 Fall, 2014 Spring, 2015 Spring

Physical Climatology, 2007 Spring

Global Climate Change: Science, Society, and Solution, IDS 3211C, 2012 Spring, 2013
Spring, 2013 Fall

Graduate

Geoscience Systems, GSS6061, 2014 Fall

Boundary Layer Meteorology, MET5305, 2008 Spring, 2009 Spring, 2010 Spring, 2011
Spring, 2012 Spring, 2013 Spring, 2015 Spring

Dynamic Meteorology I, MET5311, 2008 Fall, 2009 Fall

Dynamic Meteorology II, MET5994, 2009 Spring

Graduate Seminar GLY5931, 2006 Fall, 2007 Spring, 2007 Fall, 2008 Spring, 2014
Spring

Advanced Graduate Seminar GLY6931, 2006 Fall, 2007 Spring, 2007 Fall, 2008 Spring,
2014 Spring