

Robert Fulton Rogers

NOAA/AOML Hurricane Research Division
4301 Rickenbacker Causeway, Miami, FL 33149
Telephone: (305)-361-4536
Fax: (305)-361-4402
Email: Robert.Rogers@noaa.gov

SUMMARY:

Dr. Rogers is an employee of NOAA's Hurricane Research Division in Miami, FL. His main areas of research involve studying the role of convective- and vortex-scale processes in tropical cyclone (TC) structure and intensity change, using a combination of aircraft observations and numerical models.

PROFESSIONAL PREPARATION:

The Pennsylvania State University	Meteorology	Ph.D., 1998
The Pennsylvania State University	Meteorology	M.S., 1995
University of Virginia	Environmental Sciences	B.A., 1991

APPOINTMENTS:

2003-current: Meteorologist, NOAA/AOML Hurricane Research Division, Miami, FL

2000-2003: Assistant Scientist, Cooperative Institute for Marine and Atmospheric Studies, University of Miami, Miami, FL

1998-2000: National Research Council Postdoctoral Research Associate, Hurricane Research Division, Miami, FL

PUBLICATIONS:

Uhlhorn, E.W., B. Klotz, T. Vukicevic, P. Reasor, and **R.F. Rogers**, 2014: Observed hurricane wind speed asymmetries and relationships to motion and environmental shear. *Mon. Wea. Rev.*, Early online release, doi: <http://dx.doi.org/10.1175/MWR-D-13-00249.1>.

DeHart, J.C., R.A. Houze, Jr., and **R.F. Rogers**, 2014: Quadrant distribution of tropical cyclone inner-core kinematics in relation to environmental shear. *J. Atmos Sci.* Early online release, doi: <http://dx.doi.org/10.1175/JAS-D-13-0298.1>

Ming, J., J. A. Zhang, **R.F. Rogers**, F. D. Marks, Y. Wang, and N. Cai, 2014: An observational study of the atmospheric boundary layer structure during landfall of Typhoon Marakot (2009). Submitted to *J. Geophys. Res. – Atmos.*

Rogers, R.F., P. Reasor, and S. Lorsolo, 2013: Airborne Doppler Observations of the Inner-core Structural Differences between Intensifying and Steady-State Tropical Cyclones. *Mon. Wea. Rev.*, **141**, 2970-2991.

Rogers, R.F., S. Aberson, A. Aksoy, B. Annane, M. Black, J. Cione, N. Dorst, J. Dunion, J. Gamache, S. Goldenberg, S. Gopalakrishnan, J. Kaplan, B. Klotz, S. Lorsolo, F. Marks, S. Murillo, M. Powell, P. Reasor, K. Sellwood, E. Uhlhorn, T. Vukicevic, J. Zhang, and X. Zhang, 2013: NOAA'S Hurricane Intensity Forecasting Experiment: A Progress Report. *Bull. Amer. Meteor. Soc.*, **94**, 859–882.

- Reasor, P., **R.F. Rogers**, and S. Lorsolo, 2013: Environmental flow impacts on tropical cyclone structure diagnosed from airborne Doppler radar composites. *Mon. Wea. Rev.*, **141**, 2949-2969.
- Zhang, J. A., S. G. Gopalakrishnan, F. D. Marks, **R. F. Rogers**, and V. Tallapragada, 2013: A Developmental Framework for Improving Hurricane Model Physical Parameterizations Using Aircraft Observations. *Trop. Cycl. Res. Rev.*, **1(4)**, 419-429.
- Elsberry, R.L., L. Chen, J. Davidson, **R.F. Rogers**, Y. Wang, and L. Wu, 2013: Advances In Understanding And Forecasting Rapidly Changing Phenomena In Tropical Cyclones. *Trop. Cyc. Res. Rev.*, **2(1)**, 13-24.
- Zhang, J.A., **R.F. Rogers**, P. Reasor, E. Uhlhorn, and F.D. Marks, Jr., 2013: Asymmetric hurricane boundary layer structure from dropsonde composites in relation to the environmental wind shear. *Mon. Wea. Rev.*, **141**, 3968-3984.
- Rogers, R.F.**, S. Lorsolo, P. Reasor, J. Gamache, F.D. Marks, Jr., 2012: Multiscale analysis of tropical cyclone kinematic structure from airborne Doppler radar composites. *Monthly Weather Review*, **140**, 77-99.
- Zhang, J.A., **R.F. Rogers**, D.S. Nolan, and F.D. Marks, Jr., 2011: On the characteristic height scales of the hurricane boundary layer. *Monthly Weather Review*, **139**, 2523-2535.
- Zhang, J.A., P. Zhu, F. Masters, **R.F. Rogers**, and F.D. Marks, Jr., 2011: On momentum transport and dissipative heating during hurricane landfalls. *Journal of Atmospheric Sciences*, **68**, 1397-1404.
- Yeh, K.-S., X. Zhang, S. Gopalakrishnan, S. Aberson and **R.F. Rogers**, 2011: The AOML/ESRL Hurricane Research System: Performance in the 2008 Hurricane Season. *Natural Hazards*, DOI:10.1007/s11069-011-9787-7.
- Rogers, R.F.**, 2010: Convective-scale structure and evolution during a high-resolution simulation of tropical cyclone rapid intensification. *Journal of the Atmospheric Sciences*, **67**, 44-70.
- Fierro, A.O., **R.F. Rogers**, F.D. Marks, and D.S. Nolan, 2009: The Impact of Horizontal Grid Spacing on the Microphysical and Kinematic Structures of Strong Tropical Cyclones Simulated with the WRF-ARW Model. *Monthly Weather Review*, **137**, 3717-3743.
- Rogers, R.F.**, F.D. Marks, Jr., and T. Marchok, 2009: Tropical Cyclone Rainfall. In Malcolm G. Anderson (Ed.) *Encyclopedia of Hydrological Sciences*. Chichester, UK: John Wiley & Sons, Ltd. DOI 10.1002/0470848944.hsa030
- Rogers R.F.**, and E. Uhlhorn, 2008: Observations of the structure and evolution of surface and flight-level wind asymmetries in Hurricane Rita (2005). *Geophysical Research Letters*, **35**, L22811, doi:10.1029/2008GL034774.
- Rogers, R.F.**, M.L. Black, S.S. Chen, and R.A. Black, 2007: An Evaluation of Microphysics Fields from Mesoscale Model Simulations of Tropical Cyclones. Part I: Comparisons with Observations. *Journal of the Atmospheric Sciences*, **64**, 1811-1834.
- Lonfat, M., **R. F. Rogers**, F. D.Marks, Jr., and T. Marchok, 2007: A Parametric Model for Predicting Hurricane Rainfall. *Monthly Weather Review*, **135**, 3086-3097.
- Marchok, T., **R. F. Rogers**, and R. Tuleya, 2007: Validation Schemes for Tropical Cyclone Quantitative Precipitation Forecasts: Evaluation of Operational Models for U.S. Landfalling Cases. *Weather and Forecasting*, **22**, 726-746.
- Halverson, J., M. Black, S. Braun, D. Cecil, M. Goodman, G. Heymsfield, R. Hood, J. Molinari, **R.F. Rogers**, C. Velden, E. Zipser, R. Kakar, 2007: NASA's Tropical Cloud Systems and Processes (TCSP) Experiment: Investigating the Genesis and Intensification of Hurricanes, *Bulletin of the American Meteorological Society*, **88**, 867-882.
- Rogers, R.F.**, S.D. Aberson, M.L. Black, P. Black, J. Cione, P. Dodge, J. Dunion, J. Gamache, J.

- Kaplan, M. Powell, N. Shay, N. Surgi, and E. Uhlhorn, 2006: The Intensity Forecasting Experiment (IFEX): A NOAA Multi-year Field Program for Improving Tropical Cyclone Intensity Forecasts. *Bulletin of the American Meteorological Society*, **87**, 1523-1537.
- Houze, R.A., Jr., S.S. Chen, W.-C. Lee, **R. F. Rogers**, J. A. Moore, G. J. Stossmeister, J.L. Cetrone, W. Zhao, and M. M. Bell, 2006: The Hurricane Rainband and Intensity Change Experiment (RAINEX): Observations and modeling of Hurricanes Katrina, Ophelia, and Rita (2005) *Bulletin of the American Meteorological Society*, **87**, 1503-1521.
- Nuissier, O., **R.F. Rogers**, and F. Roux, 2005: Numerical simulation of tropical cyclones. Hurricane Bret on 22-23 August 1999. *Quarterly Journal of the Royal Meteorological Society*, **131**, 155-194.
- Rogers, R.F.**, S.S. Chen, J.E. Tenerelli, and H.E. Willoughby, 2003: A numerical study of the impact of vertical shear on the distribution of rainfall in Hurricane Bonnie (1998). *Monthly Weather Review*, **131**, 1577-1599.
- Rogers, R.F.**, S. Aberson, J. Kaplan, and S. Goldenberg, 2002: A pronounced upper-tropospheric warm anomaly encountered by the NOAA G-IV aircraft in the vicinity of deep convection. *Monthly Weather Review*, **130**, 180-187.
- Rogers, R.F.**, and J.M. Fritsch, 2001: Surface cyclogenesis from convectively-driven amplification of mid-level mesoscale convective vortices. *Monthly Weather Review*, **129**, 605-637.
- Rogers, R.F.**, J.M. Fritsch, and W.C. Lambert, 2000: A simple technique for using radar data in the dynamic initialization of a mesoscale model. *Monthly Weather Review*, **128**, 2560-2574.
- Rogers, R.F.**, and J.M. Fritsch, 1996: A general framework for convective trigger functions. *Monthly Weather Review*, **124**, 2438-2452.
- Rogers, R.F.**, and R.E. Davis, 1993: The effect of coastline curvature on the weakening of Atlantic tropical cyclones. *International Journal of Climatology*, **13**, 287-299.
- Davis, R.E., and **R.F. Rogers**, 1992: A synoptic climatology of severe storms in Virginia. *The Professional Geographer*, **44**, 319-332.

HONORS AND AWARDS:

South Florida Federal Employee of the Year – Scientific Category, South Florida Federal Executive Board, May 2011

NOAA Employee of the Month, April 2011

NASA Group Achievement Award, GRIP Team, 2011

AMS Editor's Award, *Weather and Forecasting*, 2008

Department of Commerce Bronze Medal (HRD group award) for Hurricane Katrina, May 2007

Third Place, AMS Father James B. MacElwane Award of Undergraduate Research, 1991.

Phi Beta Kappa National Honor Society

Phi Kappa Phi National Honor Society

Chi Epsilon Pi National Meteorology Honor Society

SYNERGISTIC ACTIVITIES:

Chair, Third International Workshop on Tropical Cyclones – Landfall Processes, Jeju, South Korea, December 8-10 2014

Invited Speaker, International Top-level Forum on Rapid Change Phenomena in Tropical Cyclones, Haikou, China, 5-9 November 2012

Chair, Expert Team on Landfall Processes, Tropical Meteorology Research Program, World Weather Research Programme, World Meteorological Organization, 2011 - present

Joint HRD/NHC Collaborative Hurricane Applications Requirements Team, 2011

Topic Chair for Structure and Intensity Change session, Seventh International Workshop on Tropical Cyclones, La Reunion, France, 2010

Field Program Director for the Hurricane Research Division's Hurricane Field Program, July 1-September 30, 2010

Invited Speaker and Science Judge, Typhoon Morakot Workshop, Taipei, Taiwan, 2010

Invited Speaker, Second International Workshop on Tropical Cyclone Landfall Processes, Shanghai, China, 2009

NASA HS3 Science Team, 2010-present

NSF PREDICT Science Team, 2009-2010

NASA GRIP Science Team, 2009-2012

Interdepartmental Working Group for Tropical Cyclone Research, 2008-present

NASA Hurricane Science Research Program Science Team, 2008-present

Associate Editor, *Monthly Weather Review*, 2008-present

NOAA-wide Service Assessment Team for Hurricanes Katrina and Rita, 2005

NASA Tropical Cloud Systems and Processes (TCSP) Science Team, 2005-2008

NSF Hurricane Rainband and Intensity Change Experiment (RAINEX) Science Team, 2005

Field Program Director for the Hurricane Research Division's Hurricane Field Program, July 1-September 30, 2005

Invited to attend NOAA Leadership Seminar, March 2005, in Warrenton, VA

Elected to serve as Adjunct Faculty in the Department of Meteorology and Physical Oceanography, University of Miami/RSMAS, September 2004.

Associate Editor, *Weather and Forecasting*, 2003-present

Science Working Group for TEXMEX II Field Program (2003-4)

Committee for drafting NOAA Long-term Research Program Plan entitled “Solving the Hurricane Intensity and Inland Flood Forecast Problem”, 2003

Max Eaton committee to determine best student presenter at 25th Conference on Hurricanes and Tropical Meteorology, San Diego (2002)

Visiting Research Scientist at Centre Nationale de la Recherche Scientifique, Toulouse, France (May-November, 2001)

NASA CAMEX-4 Science Team, 2001-2004

ACADEMIC COMMITTEES:

P. Sanchez, M.S. Committee, University of Miami, RSMAS, 2012-present

Y. Moon, Ph.D Committee, University of Miami, RSMAS, 2009-2012

P. Ray, Ph.D Committee, University of Miami, RSMAS, 2003-2008

Y. Moon, M.S. Committee, University of Miami, RSMAS, 2006-2008

J. Cangialosi, M.S. Committee, University of Miami, RSMAS, 2003-2004

O. Nuissier, Ph. D Committee, Université Paul Sabatier, Toulouse, France, 2003