Curriculum Vitae

Personal

Eric W. Uhlhorn
NOAA/AOML/Hurricane Research Division
4301 Rickenbacker Causeway
Miami, FL 33149
O: 305-361-4532; Fax: 305-361-4420
email: Eric.Uhlhorn@noaa.gov

Education

- Ph.D., Meteorology and Physical Oceanography, University of Miami, May 2008. Dissertation title: Gulf of Mexico Loop Current Mechanical Energy and Vorticity Response to a Tropical Cyclone. Advisor: Prof. Lynn K. (Nick) Shay.
- M.S., Physical Oceanography, Florida Institute of Technology, Dec. 1996.
- B.S., Meteorology, Florida State University, May 1993.

Employment

- Research Meteorologist, NOAA/AOML/Hurricane Research Division, Miami, FL, July 2006 – present.
- Senior Research Associate III, University of Miami/Cooperative Institute for Marine and Atmospheric Studies (AOML), Miami, FL, Mar. 2000 – July 2006.
- Systems Analyst, Booz-Allen and Hamilton (AOML), Miami, FL, Nov. 1998 – Mar. 2000.
- Research Associate, SSAI, Inc., Greenbelt, MD, July 1997 – Nov. 1998.
- Graduate Research Assistant, Florida Institute of Technology, Melbourne, FL, June 1994 – July 1997.
- Systems Analyst, PRC, Inc., Reston, VA, May 1993 – June 1994.

Peer-Reviewed Publications

E. W. Uhlhorn, B. W. Klotz, T. Vukicevic, P. D. Reasor, and R. F. Rogers (2014). Observed hurricane wind speed asymmetries and relationships to motion and environmental shear. *Mon. Wea. Rev.*, in press.

T. Vukicevic, **E. W. Uhlhorn**, P. D. Reasor, and B. Klotz (2014). A novel multi-scale intensity metric for evaluation of tropical cyclone intensity forecasts. *J. Atmos. Sci*., in press.

Zhang, B., W. Perrie, J. A. Zhang, **E. W. Uhlhorn**, and Y. He (2014): High resolution hurricane vector winds from C-band dual-polarization SAR observations. *J. Atmos. Ocean. Tech.*, in press.

Zhang, J. A., R. F. Rogers, P. D. Reasor, **E. W. Uhlhorn**, and F. D. Marks, Jr. (2013): Asymmetric hurricane boundary layer structure from dropsonde composites in relation to environmental vertical wind shear. *Mon. Wea. Rev.*, **141**(11), 3968-3984.

Cione, J., E. Kalina, J. Zhang, **E. Uhlhorn** (2013). Observations of air-sea interaction and intensity change in hurricanes. *Mon. Wea. Rev.*, **141**(7), 2368-2382.

Rogers, R., 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, K. Yeh, J. Zhang, X. Zhang (2013). NOAA's hurricane Intensity Forecasting Experiment (IFEX): A progress report. *Bull. Amer. Meteor. Soc.*, **94**(6), 859-882.

Uhlhorn, E. W. and L. K. Shay (2013). Loop current mixed layer energy response to Hurricane Lili (2002). Part II: Idealized numerical simulations. *J. Phys. Oceanogr.*, **43**(6), 1173-1192.

Uhlhorn, E. W. and D. S. Nolan (2012). Observational undersampling in tropical cyclones and implications for estimated intensity. *Mon. Wea. Rev.*, **140**, 825-840.

Uhlhorn, E. W. and L. K. Shay (2012). Loop current mixed layer energy response to Hurricane Lili (2002). Part I: Observations. *J. Phys. Oceanogr.*, **42**, 400-419.

Zhang, J. and **E. W. Uhlhorn** (2012). Hurricane sea-surface inflow angle and an observation-based parametric model. *Mon. Wea. Rev.*, **140**, 3587-3605.

Winterbottom, H.R., **E.W. Uhlhorn**, and E.P. Chassignet (2012). Design and an application of a regional coupled atmosphere-ocean model for tropical cyclone prediction. *J. Adv. Model. Earth Sys.*, **4:M10002**, doi:10.1029/2012MS000172.

El-Nimri, S. F., W. L. Jones, **E. W. Uhlhorn**, C. Ruf, J. Johnson, P. Black (2011). An improved C-band ocean surface emissivity model at hurricane-force wind speeds over a wide range of incidence angles. *Geosci. Rem. Sens. Lett.*, **7**, 641-645.

Powell, M. D., **E. W. Uhlhorn**, and J. D. Kepert (2011). Reply to comments on Estimating maximum surface winds from hurricane reconnaissance measurements. *Wea. Forecasting*, **26**, 777-779.

Shay, L. K., B. Jaimes, J. Brewster, P. Meyers, C. McCaskill, **E. Uhlhorn**, F. Marks, G. R. Halliwell Jr., O.-M. Smedstad, and P. Hogan (2011). Airborne ocean surveys of the Loop Current complex from NOAA WP-3D in support of Deepwater Horizon oil spill. Liu, Y. A, et al. (Eds.). Monitoring and modeling of the Deepwater Horizon oil spill: A record-breaking enterprise. *Geoph. Monog. Series*, **195**, AGU, Washington DC, 271 pp.

Powell, M. D., **E. W. Uhlhorn**, and J. D. Kepert (2009). Estimating maximum surface winds from hurricane reconnaissance measurements. *Wea. Forecasting*, **24**, 868—883.

Halliwell, G. R. Jr., L. K. Shay, S. D. Jacob, O. M. Smedstad, **E. W. Uhlhorn** (2008). Improving ocean model initialization for coupled tropical cyclone models using GODAE nowcasts. *Mon. Wea. Rev.*, **136**, 2576—2591.

Rogers, R. and **E. Uhlhorn** (2008). Observations of the structure and evolution of surface and flight-level wind asymmetries in Hurricane Rita (2005). *Geophys. Res. Lett.*, **35**, L22811.

Shay, L. K. and **E. W. Uhlhorn** (2008). Loop Current response to Hurricanes Isidore and Lili. *Mon. Wea. Rev.*, **136**, 3248-3274.

Uhlhorn, E. W., P. G. Black, J. L. Franklin, M. Goodberlet, J. Carswell and A. S. Goldstein (2007). Hurricane surface wind measurements from an operational stepped-frequency microwave radiometer. *Mon. Wea. Rev.*, **135**, 3070-3085.

Rogers, R. F., S. Aberson, M. Black, P. Black, J. Cione, P. Dodge, J. Dunion, J. Gamache, J. Kaplan, M. Powell, L. Shay, N. Surgi and **E. Uhlhorn** (2006). The Intensity Forecasting Experiment (IFEX): A NOAA multi-year field program for improving tropical cyclone intensity forecasts. *Bull. Amer. Meteor. Soc.*, **87**, 1523-1537.

Jiang, H., E. Zipser, P. Black, F. Marks and **E. Uhlhorn** (2006). Validation of rain rate measurements from the Stepped-Frequency Microwave Radiometer. *J. Atmos. Sci.*, **63**, 252-267.

Cione, J.J., and **E.W. Uhlhorn** (2003). Sea surface temperature variability in hurricanes: Implications with respect to intensity change. *Mon. Wea. Rev.*, **131**, 1783-1796.

Uhlhorn, E.W., and P.G. Black (2003). Verification of remotely sensed sea surface winds in hurricanes. *J. Atmos. Ocean. Tech.*, **20**, 99-116.

Katsaros, K.B., P. Vachon, P.G. Black, P.P. Dodge, and **E.W. Uhlhorn** (2000). Wind fields from SAR: Could they improve our understanding of storm dynamics? *J. Hopkins APL Tech. D.*, **21**, 86-93.

Hasler, A.F., K. Palaniappan, C. Kambhammetu, P.G. Black, **E.W. Uhlhorn**, and D. Chesters (1998). High-resolution wind fields within the inner core and eye of a mature tropical cyclone from GOES 1-min images. *Bull. Amer. Meteor. Soc.*, **79**, 2483-2496.

Relevant Technical Skills

- Extensive experience developing software on Linux/Unix based scientific computers
- Experience programming and executing codes on multi-processor supercomputers
- Programming languages: FORTRAN, C, Matlab, IDL, Perl, Python, Tkl/Tk, Unix shell scripting (bash, csh, awk)
- Extensive experience reading/writing/manipulating scientific data formats including NetCDF, HDF, GRIB, ASCII and binary meteorological data
- Some knowledge of ATCF system and GEMPAK/N-AWIPS

Recent Presentations

Uhlhorn, E. W., M. Fischer, B. Klotz, and J. Zhang. Boundary layer depths in tropical cyclones derived from surface wind observations: Some preliminary results. 30th Conference on Hurricanes and Tropical Meteorology, April 15-19, 2012. American Meteorological Society, Ponte Vedra Beach, FL.

Uhlhorn, E. W., R. Atlas, P. Black, C. Buckley, S. Chen, S. El-Nimri, R. Hood, J. Johnson, L. Jones, T. Miller, and C. Ruf. Simulation of the impact of new aircraft- and satellite-based ocean surface wind measurements on estimates of hurricane intensity. 63rd Interdepartmental Hurricane Conference, March 3-7, 2009. Office of the Federal Coordinator for Meteorology, St. Petersburg, FL.

Uhlhorn, E. W., F. Marks, J. Gamache, S. Aberson, and J. Dunion. Review of NOAA Intensity Forecasting Experiment (IFEX) 2008 accomplishments and plans for 2009. 63rd Interdepartmental Hurricane Conference, March 3-7, 2009. Office of the Federal Coordinator for Meteorology, St. Petersburg, FL.

Uhlhorn, E. W. and L. K. Shay. Simulating the baroclinic ocean current response to a tropical cyclone. 28th Conference on Hurricanes and Tropical Meteorology, April 28 – May 2, 2008. American Meteorological Society, Orlando, FL.

Uhlhorn, E. W. and L. K. Shay. Mechanical energy and vorticity budgets within the OML under tropical cyclones. Preprints, 27th Conference on Hurricanes and Tropical Meteorology. April 24-28 2006. American Meteorological Society, Monterey, CA.

Uhlhorn, E. W., P. G. Black and A. S. Goldstein. Preliminary analysis of new operational SFMR during 2004. 59th Interdepartmental Hurricane Conference. March 6-9, 2005. Office of the Federal Coordinator for Meteorology, Jacksonville, FL.

Uhlhorn, E. W. and L. K. Shay. Analysis of upper-ocean thermodynamic observations forced by Hurricane Lili. 26th Conference on Hurricanes and Tropical Meteorology, May 3-7, 2004. American Meteorological Society, Miami, FL.

Uhlhorn, E. W. and P. G. Black. Comparison of boundary layer profiles in Hurricanes Fabian and Isabel observed by GPS dropsonde and aircraft during CBLAST stepped-descents. 26th Conference on Hurricanes and Tropical Meteorology. May 3-7 2004. American Meteorological Society, Miami, FL.

Awards and Honors

- American Meteorological Society Special Award, 2010.
- NOAA/OAR Best Paper, nominated, 2008, 2009, 2011.
- NOAA bronze medal award, 2008.
- American Meteorological Society Banner I. Miller award, 2008.
- NOAA bronze medal award (Group), 2007.

Field Research Experience

- NOAA Intensity Forecasting Experiment (IFEX) Director, 2009.
- NOAA Intensity Forecasting Experiment (IFEX) 2005-present.
- ONR/Coupled Boundary Layer and Air Sea Transfer (CBLAST) 2002-2004.
- NOAA/NSF Hurricane Air-Sea Interaction (HARSIN) Experiment 2002.
- NOAA/HRD Hurricane Field Program 1998-Present.

Professional and Service

- Member, American Meteorological Society, 1995-present.
- NOAA Leadership Seminar, 2008.
- NHC Best-Track Committee, 2010-present.