

Sim David Aberson

Meteorologist, ZP-1340-IV
NOAA/OAR/AOML-Hurricane Research Division

Education:

B.S. Pennsylvania State University 1985 Meteorology, Math Minor
M.S. Pennsylvania State University 1987 Meteorology
Ph.D. University of Maryland 2003 Atmospheric Sciences

Employment history at NHRL and HRD:

1981-1982: Community Laboratory Research Internship
1982-1986: Various periods over summers and winter holidays
1987-1988: TEM contractor
1988- : Meteorologist

Awards:

2011 NASA Group Achievement Award

2007 National Academy of Science Kavli Frontier Fellow

2006 Department of Commerce Bronze Medal (group award for the Hurricane Research Division)

2005 GLBT Scientist Award from the National Organization of Gay and Lesbian Scientists and Technical Professionals

2003 Presidential Early Career Award for Scientists and Engineers

National Oceanic and Atmospheric Administration Research Employee of the Year (2003)

National Oceanic and Atmospheric Administration / Environmental Research Laboratories / 1999 Outstanding Scientific Paper Award for "The Impact of Omega Dropwindsondes on Operational Hurricane Track Forecast Models," Bulletin of the American Meteorological Society, 77 (5), 925-933 (1996). [Co-authored with Burpee, Lord, Franklin, and Tuleya.]

Committee memberships:

American Meteorological Society Committee on Tropical Meteorology and Tropical Cyclones

American Meteorological Society Board on Women and Minorities

Hurricane Forecast Improvement Project Observations Team Chair

NOAA Diversity Council/Committee

NOAA North American Regional Team (NART)

List of refereed publications:

Aberson, S. D., 2013: Climatological forecasts of tropical cyclone phase. *Wea. Forecast.*, in review.

Vukicevic, T., A. Aksoy, P. Reasor, S. Aberson, K. Sellwood, F. Marks, 2013: Joint impact of forecast tendency and state error biases in Ensemble Kalman Filter data assimilation of inner-core tropical cyclone observations. *Mon. Wea. Rev.*, in review.

Aksoy, A., S. D. Aberson, T. Vukicevic, K. J. Sellwood, S. Lorsolo and X. Zhang, 2013: Assimilation of high-resolution tropical cyclone observations with an ensemble Kalman filter using NOAA/AOML/HRD's HEDAS: Evaluation of the 2008-2011 vortex-scale analyses. *Mon. Wea. Rev.*, in print.

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, J. Zhang and X. Zhang, 2013: NOAA's Hurricane Intensity Forecasting Experiment (IFEX): A Progress Report. *Bull. Amer. Met. Soc.*, in print.

Wu, C.-C., S.-G. Chen, C.-C. Yang, = P.-H. Lin, and S. D. Aberson, 2011: Potential vorticity diagnosis of the factors affecting the track of Typhoon Sinlaku (2008) and the impact from dropwindsonde data during T-PaRC. *Mon. Wea. Rev.*, **140**, 2670-2688.

Aksoy, A., S. Lorsolo, T. Vukicevic, K. J. Sellwood, S. D. Aberson, and F. Zhang, 2011: An HWRF Hurricane Ensemble Data Assimilation System (HEDAS) for high-resolution data: The impact of airborne Doppler radar observations in an OSSE. *Mon. Wea. Rev.*, **140**, 1843-1862.

Yeh, K.-S., X. Zhang, S. Gopalakrishnan, S. Aberson, and R. Rogers, 2011: Performance of the Experimental HWRF in the 2008 Hurricane Season. *Nat. Haz.*, **63**, 1439-1449.

Aberson, S. D., 2011: The impact of dropwindsonde data from the THORPEX-Pacific Area Regional Campaign and the NOAA Hurricane Field Program on global tropical cyclone forecasts in the Global Forecasting System. *Mon. Wea. Rev.*, **139**, 2689-2703.

Chou, K.-S., C.-C. Wu, P.-H. Lin, S. D. Aberson, M. Weissmann, F. Harnisch, and T. Nakazawa, 2011: The impact of dropwindsondes on typhoon track forecasts in DOTSTAR and T-PaRC. *Mon. Wea. Rev.*, **139**, 1728-1743.

Aberson, S. D., S. J. Majumdar, C. A. Reynolds, and B. Etherton, 2011: An observing system experiment for tropical cyclone targeting techniques using the Global Forecast System. *Mon. Wea. Rev.*, **139**, 895-907.

Weissmann, M., F. Harnisch, C.-C. Wu, P.-H. Lin, Y. Ohta, K. Yamashita, Y. Kim, T. Nakazawa, E.-H. Jeon, and S. Aberson, 2011: The influence of dropsondes on typhoon track and mid-latitude forecasts. *Mon. Wea. Rev.*, **139**, 908-920.

Zhang, X., T. S. Quirino, K.-S. Yeh, S. G. Gopalakrishnan, F. D. Marks, Jr., S. G. Goldenberg and S. D. Aberson, 2011: Toward improving hurricane forecasts with high-resolution modeling. *Comp. Sci. Engr.*, **13**, 13-21.

Aberson, S. D., C.-C. Wu, M. Bell, J. Halverson, C. Fogarty, J. J. Cione, and M. Weissmann, 2010: Aircraft used to observe tropical cyclones. *Global Perspectives on Tropical Cyclones, 2nd Edition.*, 227-240.

Aberson, S. D., 2010: Ten years of hurricane synoptic surveillance (1997-2006). *Mon. Wea. Rev.*, **138**, 1536-1549.

Goni, G., M. DeMaria, J. Knaff, C. Sampson, J. Price, A. Mehra, I. Ginis, I.-I. Lin, P. Sandery, S. Ramos-Buarque, M. M. Ali, F. Bringas, S. Aberson, R. Lumpkin, G. Halliwell, C. Lauer, E. Chassignet, A. Mavume, K. Kang, 2010: The ocean observing system for tropical cyclone intensification forecasts and studies. *Oceanobs*.

Wu, C.-C., J.-H. Chen, S. J. Majumdar, M. S. Peng, C. A Reynolds, S. D. Aberson, R. Buizza, M. Yamaguchi, S.- G. Chen, T. Nakazawa, and K.-H. Chou, 2009: Inter-comparison of targeted guidance for tropical cyclones in the North western Pacific. *Mon. Wea. Rev.*, **137**, 2471-2492.

Aberson, S. D., 2009: Are There Regimes in North Atlantic Tropical Cyclone Activity? *Bull. Amer. Met. Soc.*, **90**, 39-43.

Aberson, S. D., 2008: An alternative tropical cyclone intensity forecast verification technique. *Wea. Forecast.*, **23**, 1304-1310.

Pu, X., X. Li, C. S. Velden, S. D. Aberson, and W. T. Liu, 2008: Impact of aircraft dropsonde and satellite wind data on the WRF numerical simulation of two landfalling tropical storms during TCSP. *Wea. Forecast.*, **23**, 62-79.

Aberson, S. D., 2008: Large forecast degradations due to synoptic surveillance during the 2004 and 2005 hurricane seasons. *Mon. Wea. Rev.*, **136**, 3138-3150.

Reynolds, C. A., M. S. Peng, S. J. Majumdar, S. D. Aberson, C. H. Bishop, and R.

Buizza, 2007: Interpretation of adaptive observing guidance for Atlantic tropical cyclones. *Mon. Wea. Rev.*, **135**, 4006-4029.

Wu, C.-C., K.-H. Chou, P.-S. Lin, S. D. Aberson, M. S. Peng, and T. Nakazawa, 2007: The impact of dropsonde data on typhoon track forecasting in DOTSTAR. *Wea. Forecast.*, **22**, 1157-1176.

Rogers, R. F., S. Aberson, M. Black, P. Black, J. Cione, P. Dodge, J. Dunion, J. Gamache, J. Kaplan, M. Powell, L. 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. *Bull. Amer. Met. Soc.*, **87**, 1523-1537.

Montgomery, M. T., M. Bell, S. D. Aberson, and M. L. Black, 2006: Superintense winds in Hurricane Isabel (2003). Part I: Mean structure and maximum intensity estimates. *Bull. Amer. Met. Soc.*, **87**, 1335-1347.

Aberson, S. D., M. T. Montgomery, M. Bell, and M. L. Black, 2006: Superintense winds in Hurricane Isabel (2003). Part II: Extreme localized wind. *Bull. Amer. Met. Soc.*, **87**, 1349-1354.

Majumdar, S. J., S. D. Aberson, C. H. Bishop, R. Buizza, M. S. Peng, and C. A. Reynolds, 2006: A comparison of adaptive observing guidance for Atlantic tropical cyclones. *Mon. Wea. Rev.*, **134**, 2354-2372.

Aberson, S. D., M. L. Black, R. A. Black, R. W. Burpee, J. J. Cione, C. Landsea, and F. D. Marks, 2006: Thirty years of tropical cyclone research with the NOAA P-3 aircraft. *Bull. Amer. Met. Soc.*, **87**, 1039-1055.

Aberson, S. D., J. P. Dunion, and F. D. Marks, 2006: A photograph of a wavenumber two asymmetry in the eye of Hurricane Erin. *J. Atmos. Sci.*, **63**, 387-391.

Aberson, S. D., and B. Etherton, 2006: Targeting and data assimilation studies during Hurricane Humberto (2001). *J. Atmos. Sci.*, **63**, 175-186.

Aberson, S. D., and J. B. Halverson, 2006: Kelvin-Helmholtz waves in the eye of Hurricane Erin. *Mon. Wea. Rev.*, **134**, 1036-1038.

Wu, C.-C., P.-H. Lin, S. D. Aberson, T.-C. Yeh, W.-P. Huang, J.-S. Hong, G.-C. Lu, K.-C. Hsu, I.-I. Lin, K.-H. Chou, P.-L. Lin, and C.-H. Liu, 2005: Dropwindsonde observations for Typhoon Surveillance near the Taiwan Region (DOTSTAR): An Overview. *Bull. Amer. Met. Soc.*, **86**, 787-790.

Aberson, S. D., 2003: Targeted observations to improve tropical cyclone track forecasts. *Mon. Wea. Rev.*, **131**, 1613-1628.

Aberson, S. D., 2003: Five-day tropical cyclone track forecasting in the Northwestern

Pacific basin. *Mon. Wea. Rev.*, **131**, 1491-1497.

Aberson, S. D., 2003: Targeted observations to improve tropical cyclone track forecasts in the Atlantic and Eastern Pacific basins. Ph.D. Dissertation, University of Maryland, 337 pp.

Aberson, S. D., 2002: The first two years of operational synoptic surveillance missions. *Wea. Forecasting*, **17**, 1101-1110.

Rogers, R. F., S. D. Aberson, J. Kaplan, and S. B. Goldenberg, 2002: A pronounced upper-tropospheric warm anomaly encountered by the NOAA G-IV aircraft in the vicinity of deep convection. *Mon. Wea. Rev.*, **130**, 180-187.

Powell, M. D., and S. D. Aberson, 2001: Accuracy of United States tropical cyclone landfall forecasts in the Atlantic basin (1976-2000). *Bull. Amer. Met. Soc.*, **82**, 2749-2767.

Aberson, S. D., 2001: The ensemble of tropical cyclone track forecasting models in the North Atlantic Basin (1976-2000). *Bull. Amer. Met. Soc.*, **82**, 1895-1904.

Michaels, M., M. Shepard, S. D. Aberson, H. A. Friedman, and K. Murphy, 2001: Survey results of Society membership: The face of our profession at the threshold of the new millennium. *Bull. Amer. Met. Soc.*, **82**, 1331-1352.

Aberson, S. D., and J. L. Franklin, 1999: Impact on hurricane track and intensity forecasts of GPS dropwindsonde observations from the first-season flights of the NOAA Gulfstream-IV jet aircraft. *Bull. Amer. Met. Soc.*, **80**, 421-428.

Aberson, S. D., 1998: Five-day tropical cyclone track forecasts in the North Atlantic basin. *Wea. Forecasting*, **13**, 1005-1015.

Aberson, S. D., 1997: The prediction of the performance of a nested barotropic hurricane track forecast model. *Wea. Forecasting*, **12**, 24-30.

Burpee, R. W., J. L. Franklin, S. J. Lord, R. E. Tuleya, and S. D. Aberson, 1996: The impact of Omega dropwindsondes on operational hurricane track forecast models. *Bull. Amer. Met. Soc.*, **77**, 925-933.

Franklin, J. L., S. E. Feuer, J. Kaplan, and S. D. Aberson, 1996: Tropical cyclone motion and surrounding flow relationships: Searching for beta gyres in Omega dropwindsonde datasets. *Mon. Wea. Rev.*, **124**, 64-84.

Aberson, S. D., and M. DeMaria, 1994: Verification of a nested barotropic hurricane track forecast model (VICBAR). *Mon. Wea. Rev.*, **122**, 2804-2815.

Burpee, R. W., S. D. Aberson, P. G. Black, M. D. DeMaria, J. L. Franklin, J. S. Griffin, S.

H. Houston, J. Kaplan, S. J. Lord, F. D. Marks, M. D. Powell, and H. E. Willoughby, 1994: Real-time guidance provided by NOAA's Hurricane Research Division to forecasters during Emily of 1993. *Bull. Amer. Met. Soc.*, **75**, 1765-1783.

DeMaria, M. D., and S.D. Aberson, 1994: Development of a nested spectral hurricane model. In *Research Activities in Atmospheric and Oceanic Modelling*, G.J. Boer (ed.). CAS/JSC Working Group on Numerical Experimentation, Report No. 19, WMO/TD-No. 592, 5.36.

DeMaria, M. D., S. D. Aberson, K. V. Ooyama, and S. J. Lord, 1992: A nested spectral model for hurricane track forecasting. *Mon. Wea. Rev.*, **120**, 1628-1643.