Jason Sippel
(US Citizen, registered for Selective Service)
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EDUCATION

- PhD Atmospheric Sciences, Texas A&M University, 2008
- MS, Atmospheric Sciences, Texas A&M University, 2004
- BS, Meteorology, Texas A&M University, 2002

PROFESSIONAL EXPERIENCE

1/1/2017 to present: DA Team Lead, NOAA/HRD

- POC between NOAA NHC, EMC, and HRD for optimizing tropical cyclone reconnaissance data assimilation in NOAA operational models
- Collaborate with EMC HWRF group for annual HWRF upgrades
- Collaborate with EMC and NHC for tasking operational reconnaissance
- Assistant manager for Joint Hurricane Testbed

11/1/2014 to 12/31/2016: HWRF Support Scientist, IMSG

- Worked with the NOAA HWRF group for testing and improving HWRF
- Collaborated with outside institutions to improve hurricane analysis
- Sponsored and advised a doctoral student at The Pennsylvania State University

10/1/2010 to 10/31/2014: Assistant Research Scientist, GEST/GESTAR, NASA GSFC

- Worked with a WRF-based ensemble data assimilation system to test assimilation of new Global Hawk data taken from hurricanes
- Participated in NASA's HS3 Experiment observing hurricanes with unmanned aircraft
- Sponsored and advised a doctoral student at The Pennsylvania State University
- Worked with Morgan State University to teach underrepresented K-12 students about NASA's hurricane research program

10/1/2008 to 9/30/2010: Postdoctoral fellow, NASA postdoctoral program

- Used WRF ensembles and idealized runs to understand the role of the Saharan Air Layer in affecting tropical cyclone intensity
- Began using a WRF ensemble data assimilation system to test assimilation of simulated observations from Global Hawk unmanned aircraft

CURRENT AND RECENT PROJECTS

- PI, Improving the use of dropsondes in NOAA operations: NOAA JTTI
- PI, Using Small Unmanned Aircraft System Observations in Operational Data Assimilation to Improve Forecasts of Tropical Cyclone Track, Intensity, and Structure: NOAA OMAO
- CO-I, Assimilation of Mesonet data into HWRF for the improvement of Precipitation Forecasts after Landfall: OAR/WPO Grand Precipitation Challenge

RECENT/RELEVANT PUBLICATIONS

Christophersen, H., J. A. Sippel, A. Aksoy, and N. Baker, 2021: Tropical Cyclone Data Assimilation. AGU Geophysical Monograph Series: "Earth's Climate and Weather: Dominant Variability and Disastrous Extremes".

Zawislak, J., and coauthors, 2021: Accomplishments of NOAA's Airborne Hurricane Field Program and a Broader Future Approach to Forecast Improvement. Bull. Amer. Meteor. Soc., Accepted.

Zhang, Z, and coauthors, 2020: The Impact of Stochastic Physics-Based Hybrid GSI/EnKF Data Assimilation on Hurricane Forecasts Using EMC Operational Hurricane Modeling System. Atmosphere, 11.

Li, J., J. Li, C. Velden, P. Wang, T. J. Schmt, and **J. A. Sippel, 2020**: Impact of Rapid-Scan-Based Dynamical Information From GOES-16 on HWRF Hurricane Forecasts. JGR Atmospheres, 125.

Wick, G.A., and coauthors, 2020: NOAA's Sensing Hazards with Operational Unmanned Technology (SHOUT) Experiment: Observations and forecast impacts. Bull. Amer. Meteor. Soc., in press.

Munsell, E. B., F. Zhang, S. A. Braun, **J. A. Sippel**, and A. C. Didlake, 2018: The inner-core temperature structure of Hurricane Edouard (2014): Observations and ensemble variability. Mon. Wea. Rev., 146, 135-155.

Wang, W., and coauthors, 2017: Improving HWRF simulations of surface wind and inflow angle in the eyewall area. Wea. Forecasting, 146, 887-898.

Zhang, J. A., and coauthors, 2017: Evaluating the impact of improvement in the horizontal diffusion parameterization on hurricane prediction in the operational Hurricane Weather and Research Forecast (HWRF) model. Wea. Forecasting, 146, 317-329.

Nystrom, R., F. Zhang, E. B. Munsell, S. A. Braun, **J. A. Sippel**, Y. Weng, and K. Emanuel, 2017: Predictability and dynamics of Hurricane Joaquin (2015) explored through convection-permitting ensemble sensitivity experiments. J. Atmos. Sci., 75, 401-424.

Munsell, E. B., F. Zhang, **J. A. Sippel**, and S. A. Braun, 2017: Dynamics and predictability of the intensification of Hurricane Eduoard (2014). J. Atmos. Sci., 74, 573-594.

Tong, M., and coauthors, 2017: Impact of assimilating aircraft reconnaissance observations on tropical cyclone initialization and prediction using the operational HWRF and GSI ensemble-variational hybrid data assimilation. Mon. Wea. Rev., 146, 4155-4177.

Zhu, L., and coauthors, 2016: Prediction and predictability of high-impact Western Pacific landfalling Tropical Cyclone Vicente (2012) through convection-permitting ensemble assimilation of Doppler radar velocity. Mon. Wea. Rev., 144, 21-43.

Sippel, J. A., F. Zhang, Y. Weng, S. A. Braun,and D. J. Cecil, 2015: Further exploring the potential for assimilation of unmanned aircraft observations to benefit hurricane analysis and forecasts. Tropical Cyclone Research and Review, 4, 64-70.

Sippel, J.A., 2015. Hurricane Predictability. Encyclopedia of Atmospheric Sciences, 2nd edition, Vol 6, pp. 30–34.

Munsell, E., **J. A. Sippel**, S. A. Braun, Y. Weng, and F. Zhang, 2015: Dynamics and predictability of Hurricane Nadine (2012) evaluated through convection-permitting ensemble analysis and forecasts with NASA HS3 field campaign observations. Mon. Wea. Rev., 143, 4514-4532.

Sippel, J. A., F. Zhang, Y. Weng, L. Tian, G. M. Heymsfield, and S. A. Braun, 2014: Ensemble Kalman filter assimilation of HIWRAP observations of Hurricane Karl (2010) from the Unmanned Global Hawk aircraft. Mon. Wea. Rev., in press.

Sippel, J. A., S. A. Braun, F. Zhang, and Y. Weng, 2013: Ensemble Kalman filter assimilation of simulated HIWRAP Doppler velocity data in a hurricane. Mon. Wea. Rev., 141, 2683-2704.

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