

## Publications

### FY15 FFOs

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- Lim, A. H. N., J. A. Jung, S. E. Nebuda, J. M. Daniels, W. Bresky, M. Tong, V. Tallapragada, 2017: Hurricane Track and Intensity Forecasts Impact Assessment from the Assimilation of Hourly Visible, Shortwave and Clear Air Water Vapor Atmospheric Motion Vectors in HWRF, Submitted to Weather and Forecasting.
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- Jiang, X., B. Xiang, M. Zhao, T. Li, S.-J. Lin, and Z. Wang, 2018: Predictability of Cyclogenesis in a Global High-Resolution Coupled Model System, *J. Clim.*, 31, 6209–6227.

#### **FY16 FFOs**

- Bhargava, K, E Kalnay, J Carton and F Yang, 2017: Estimation of Systematic Errors in the GFS Using Analysis Increments. *J. of Geophysical Research: Atmospheres*. 123, 1626, 1637. <https://doi.org/10.1002/2017JD027423>
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- Fu, J. X., and Co-authors, 2017b: Toward understanding the diverse impacts of air-sea interactions on MJO simulations. *J. Geophys. Res.-Ocn.*, 122, 8855-8875. <https://doi.org/10.1002/2017JC013187>
- Fu, J. X., and Co-authors, 2018: Impacts of different cumulus schemes on the pathways through which SST feedbacks to the Madden-Julian Oscillation. *J. Climate*, [DOI: 10.1175/JCL-D-17-0432.1](https://doi.org/10.1175/JCL-D-17-0432.1)
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- Liu, J., and Z. Pu, 2018: Does soil moisture has influence on near-surface temperature

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Vigaud, N., A. Robertson, and M.K. Tippett, 2018: Predictability of Recurrent Weather Regimes over North America during Winter from Submonthly Reforecasts. *Mon. Wea. Rev.*, 146, 2559–2577, <https://doi.org/10.1175/MWR-D-18-0058.1>

## Presentations

### FY15 FFOs

Bosart, L. F., 2018: Variable Decadal Temperature Prediction Skill in the North Atlantic: The Role of Ocean Heat Transport, *International Conference on Subseasonal to Decadal Prediction*, 17-21 September, Boulder, Colorado.

<https://www.wcrp-climate.org/s2s-s2d-2018-posters/s2s-s2d-2018-list-posters>

Chang, C., D. Kleist, and K. Ide, 2018: Improving tropical cyclone initialization for NCEP operations: A case study of Hurricane Joaquin (2015). *Amer. Geophys. Union Fall Meeting*, 10-14 December, Washington, D.C..

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Ferrier, B. S., Z. Janjic, E. Aligo, D. Jovic, E. Roger, J. R. Carley, M. Pyle, and G. J. DiMego, 2017: NMMB model changes as part of the NAMv4 upgrade. *28th Conference on Numerical Weather Prediction, 97th American Meteorological Society Annual Meeting*, 22-26 January, Seattle, Washington.

<https://ams.confex.com/ams/97Annual/webprogram/Paper312628.html>

Fritz, C. L., and Z. Wang, 2015: Water Vapor Budget in a Developing Tropical Cyclone and Its Implication for Tropical Cyclone Formation, *95th American Meteorological Society Annual Meeting*, 4-8 January, Phoenix, Arizona.

<https://ams.confex.com/ams/95Annual/webprogram/Paper265259.html>

Fritz, C. L., Z. Wang and S. Nesbitt, 2016: Cloud Evolution during Atlantic Tropical Cyclone Formation as Revealed by TRMM PR, *American Meteorological Society 32nd Conference on Hurricanes and Tropical Meteorology*, 17-22 April, San Juan, Puerto Rico. <https://ams.confex.com/ams/32Hurr/webprogram/Paper293093.html>

- Fritz, C., Z. Wang, and S. Nesbitt, 2017: Vertical Structure and Contribution of Different Types of Precipitation during Tropical Cyclone Formation as Revealed by TRMM PR, *97th American Meteorological Society Annual Meeting*, 22-26 January, Seattle, Washington. <https://ams.confex.com/ams/97Annual/webprogram/Paper314274.html>
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- Li, W., Z. Wang, and M. Peng, 2015: Assessing Tropical Cyclone Forecast Skill in the GEFS Reforecast Version 2, *Amer. Geophys. Union Fall Assembly*, 14-18 December, San Francisco, California. <https://agu.confex.com/agu/fm15/webprogram/Paper65216.html>
- Li, W., Z. Wang, M. Peng, and R. McTaggart-Cowan, 2015: Evaluation of Tropical Cyclogenesis Forecasts in Different Synoptic-scale Environments, *95th American Meteorological Society Annual Meeting*, 4-8 January, Phoenix, Arizona. <https://ams.confex.com/ams/95Annual/webprogram/Paper265273.html>
- Li, W., Z. Wang, and M. Peng, 2016: Potential Predictability of Tropical Cyclones at Different Timescales: Analysis from the GEFS Reforecast Version-2, *American Meteorological Society 32nd Conference on Hurricanes and Tropical Meteorology*, 17-22 April, San Juan, Puerto Rico. <https://ams.confex.com/ams/32Hurr/webprogram/Paper293154.html>
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- Li, W., Z. Wang, M. Peng, X. Jiang, R. McTaggart-Cowan, 2017: Predictability of Atlantic Tropical Cyclone Activity at Different Time Scales, *97th American Meteorological Society Annual Meeting*, 22-26 January, Seattle, Washington. <https://ams.confex.com/ams/97Annual/webprogram/Paper307883.html>
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<https://www.ametsoc.org/ams/index.cfm/meetings-events/ams-meetings/30th-conference-on-climate-variability-and-change-24th-conference-on-probability-and-statistics-and-16th-conference-on-artificial-intelligence/>

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Miller, D.E., and Z. Wang, 2018: Assessing the Sources of Subseasonal to Seasonal Predictability in the Climate Forecast System Version 2, *American Meteorological Society Annual Meeting*, 7-11 January, Austin, Texas.

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Penny, S. G., 2015: *CPO / DOE Workshop on High-Resolution Coupling and Initialization to Improve Predictability and Predictions in Climate Models*, 30 September-2 October.

Penny, S. G., 2018: Big Data Estimation of Climatological Error Covariance Using Ensemble Ocean Reanalysis. *Amer. Geophys. Union Ocean Sciences*, 11-16 February, Portland, Oregon. <https://agu.confex.com/agu/os18/meetingapp.cgi/Paper/320146>

Penny, S. G., 2017: Ocean DA Perspectives. *JCSDA JEDI Planning Workshop*, 4-5 April,

Penny, S. G., 2017: Ocean DA perspectives, *NSF workshop to identify NSCI priorities for data assimilation*, 6-7 April, Arlington, Virginia.

Penny, S. G., 2017: Ocean data assimilation perspectives, *2nd ALE workshop*, April, Silver Spring, Maryland.

Penny, S. G., Ensemble-based ocean DA efforts at NCEP, *Ocean Observing and Monitoring Division Community Workshop*, Silver Spring, Maryland.

Penny, S. G., 2017: Intercomparisons between GODAS Releases, *COST/CLIVAR Workshop on ocean reanalyses and inter-comparisons*, 29-30 June, Toulouse, France.

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Penny, S. G., 2018: Challenges in Coupled Data Assimilation for State Estimation and Prediction of the Tropical Pacific, *US CLIVAR Tropical Pacific Observing System workshop*, 1-3 May, Boulder, Colorado. <https://usclivar.org/meetings/tpos-2020-workshop>

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- Robertson, A. W., 2017: Weather Regime Diagnostic Tools for Sub-monthly Ensemble Forecasts, *NGGPS/MAPP PI Meeting*, 2-3 August, 2017, College Park, Maryland. [https://www.weather.gov/sti/stimodeling\\_nggps\\_presentations](https://www.weather.gov/sti/stimodeling_nggps_presentations)
- Vigaud, N., 2017: A multi-model ensemble of S2S precipitation forecasts, *IAMAS Conference*, 28 August-1 September, Cape Town, South Africa. <http://iapso.iugg.org/scientific-assemblies23/79-2017-iapso-iamas-iaga-joint-assembly.html>
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- Wang, Z., and I. Hanks, 2015: Moisture and Precipitation Evolution during Tropical Cyclone Formation as Revealed by SSMI/SSMIS, *Amer. Geophys. Union Fall Assembly*, 14-18 December, San Francisco, California. <https://agu.confex.com/agu/fm15/webprogram/Paper65427.html>
- Wang, Z., 2015: Impacts of Rossby Wave Breaking on Atlantic Tropical Cyclone Activity, *17th Cyclone workshop*, 25-30 October, Pacific Grove, California. <http://www.atmos.albany.edu/facstaff/rmctc/cw17/>
- Wang, Z., 2015: Developing Physics-oriented Diagnostic Tools for Model Evaluation and Improvement, *NGGPS External FFO Program Meeting*, 16-17 July, College Park, Maryland. [https://www.weather.gov/sti/stimodeling\\_nggps\\_presentations](https://www.weather.gov/sti/stimodeling_nggps_presentations)
- Wang, Z., W. Li, and M. Peng, 2015: Investigating Model Deficiency through Physics-oriented Diagnoses: Tropical Cyclones, MJO and Precipitation, *5th Scientific Workshop on ONR DRI Unified Parameterization for Extended Range Prediction*, Monterey, California.

- Wang, Z., W. Li, and M. Peng, 2015: An Evaluation of Tropical Cyclone Forecast Skill in the GEFS Reforecast Version 2, *23rd Conference on Numerical Weather Prediction*, 29 June-3 July, Chicago, Illinois.  
<https://ams.confex.com/ams/27WAF23NWP/webprogram/Paper273732.html>
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- Wang, Z., 2016: Developing Physics-oriented Diagnostic Tools for Model Evaluation and Improvement, *NGGPS PI and Program Meeting*, 2-3 August, College Park, Maryland.
- Wang, Z., and I. Hanks, 2016: Moisture and Precipitation Evolution during Tropical Cyclone Formation as Revealed by SSMI/SSMIS, *American Meteorological Society 32nd Conference on Hurricanes and Tropical Meteorology*, 17-22 April, San Juan, Puerto Rico. <https://ams.confex.com/ams/32Hurr/webprogram/Paper293151.html>
- Wang, Z., and I. Hanks, 2016: Moisture and Precipitation Evolution during Tropical Cyclone Formation as Revealed by SSMI/SSMIS, *96th American Meteorological Society Annual Meeting*, 10-14 January, New Orleans, Louisiana.  
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- Wang, Z., 2017: Predictive Skill and Predictability of North Atlantic Tropical Cyclogenesis in Different Synoptic Flow Regimes, Amer. Geophys. Union Fall Meeting, 11-15 December, New Orleans, Louisiana.  
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[http://collaboration.cmc.ec.gc.ca/science/rpn/wgne\\_wse/index-en.html](http://collaboration.cmc.ec.gc.ca/science/rpn/wgne_wse/index-en.html)
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- Wang, Z., 2018: Extratropical Impacts on Atlantic Tropical Cyclone Activity and the Implications for S2S Prediction and Predictability, *International Conference on Subseasonal to Decadal Prediction*, 17-21 September, Boulder, Colorado.  
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Wang, Z., 2018: Predictability of North Atlantic Tropical Cyclogenesis in Different Synoptic Flow Regimes, *Asia Oceania Geosciences Society 15th Annual Meeting*, 3-8 June, Honolulu, Hawaii.

<https://www.meetmatt-svr3.net/aogs/aogs2018/mars2/confSessionView.asp?sID=102>

Wang, Z., 2018: Predictive Skill and Predictability of North Atlantic Tropical Cyclogenesis in Different Synoptic Flow Regimes, *American Meteorological Society 33rd Conference on Hurricanes and Tropical Meteorology*, 16-20 April, Ponte Vedra, Florida.

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Wang, Z., 2018: Exploring the Key Features of Tropical Cyclogenesis using Satellite Data, *American Meteorological Society Annual Meeting*, 7-11 January, Austin, Texas.

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Lim, A., J. A. Jung, S. Nebuda, W. Bresky, J. Daniels, M. Tong, and V. Tallapragada 2017: Assimilation of High Temporal Satellite Derived Atmospheric Motion Vectors to Improve Hurricane Forecasts Using HWRF, *21st Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface, 97th American Meteorological Society Annual Meeting*, 22-26 January, Seattle, Washington.

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## **Presentations**

### **FY18 NGGPS Funded through sources other than FFOs**

- The paper on evaluation of convection-permitting precipitation forecasts, including FV3 forecasts, for the 2017 HMT Flash Flood and Intense Rainfall Experiments (Snook et al. 2019) is conditionally accepted by WAF.
- A paper entitled “How Well Does an FV3-based Model Predict Precipitation at a Convection-Allowing Resolution? Results from CAPS Forecasts for the 2018 NOAA Hazardous Weather Testbed with Different Physics Combinations” is accepted by GRL (Zhang et al. 2019).
- A paper to evaluate FV3 CONUS CAM Forecasts by CAPS for the 2018 NOAA Hazardous Weather Testbed, including its surface condition forecast biases, is in preparation.