Recent Publications

(Alphabetized by lead author; EMC Federal authors in black boldface, EMC Contractor authors in red boldface; full author affiliations listed in the articles)

2022

Deb, M., **Abdolali, A.**, Kirby, J. T., & Shi, F. (2022). Hydrodynamic modeling of a complex salt marsh system: Importance of channel shoreline and bathymetric resolution. *Coastal Engineering*, 104094, 173, https://doi.org/10.1016/j.coastaleng.2022.104094.

Guan, H., **Zhu, Y.**, **Sinsky, E.**, **Fu, B., Li, W., Zhou, X., Xue, X.**, **Hou, D.**, Peng, J., Nageswararao, M. M., **Tallapragada, V.**, Hamill, T. M., Whitaker, J. S., Bates, G., Pegion, P., Frederick, S., Rosencrans, M., & Kumar, A., 2022: GEFSv12 reforecast dataset for supporting subseasonal and hydrometeorological applications, *Monthly Weather Review*. https://doi.org/10.1175/MWR-D-21-0245.1

Hamill, T., Whitaker, J. S., Shlyaeva, A., Bates, G., Fredrick, S., Pegion, P., **Sinsky, E.**, **Zhu, Y.**, **Tallapragada, V.**, **Guan, H**., **Zhou, X.**, and **Woollen, J.** (2022). The Reanalysis for the Global Ensemble Forecast System, version 12. *Mon. Wea. Rev.*, **150(1)**, 59-79. https://doi.org/10.1175/MWR-D-21-0023.1

Purser, R. J., Rancic, M., & **De Pondeca, M. S. F. V.**, 2022: The Multigrid Beta Function Approach for Modeling of Background Error Covariance in the Real-Time Mesoscale Analysis (RTMA). *Monthly Weather Review*. https://doi.org/10.1175/MWR-D-20-0405.1

Qian, W., and **J. Du**, 2022: Anomaly Format of Atmospheric Governing Equations with Climate as a Reference Atmosphere. *Meteorology* **1(2)**, 127-141. https://doi.org/10.3390/meteorology1020008

Qian, W., J. C.-H. Leung, J. Ren, **J. Du**, Y. Feng, and B. Zhang, 2022: Anomaly Based Synoptic Analysis and Model Prediction of Six Dust Storms Moving From Mongolia to Northern China in Spring 2021. *J. Geophysical Research: Atmosphere.* **127(7)**. https://doi.org/10.1029/2021JD036272

Slivinski, L. C., **Lippi, D. E.**, Whitaker, J. S., Ge, G., **Carley, J. R.**, Alexander, C. R., and Compo, G. P. (2022). Overlapping Windows in a Global Hourly Data Assimilation System, *Monthly Weather Review*, https://doi.org/10.1175/MWR-D-21-0214.1

2021

Abdolali, A., **Van Der Westhuysen, A., Ma, Z., Mehra, A.,** Roland, A., and Moghimi, S., 2021: Evaluating the accuracy and uncertainty of atmospheric and wave model hindcasts during severe events using model ensembles. *Ocean Dynamics*, **71**, 19 pp. https://doi.org/10.1007/s10236-020-01426-9 or https://rdcu.be/cdfjB

Belochitski, A., and V. Krasnopolsky, 2021: Robustness of neural network emulations of radiative transfer parameterizations in a state-of-the-art general circulation model. *Geosci. Model Dev.*, **14**, 7425–7437, 2021. https://doi.org/10.5194/gmd-14-7425-2021

Black, T. L., **J. A. Abeles**, **B. T. Blake**, **D. Jovic**, **E. Rogers**, **X. Zhang**, **E. A. Aligo**, **L. C. Dawson**, **Y. Lin**, **E. Strobach**, **P. C. Shafran**, and **J. R. Carley**, 2021: A Limited Area Modeling Capability for the Finite-Volume Cubed-Sphere (FV3) Dynamical Core and Comparison with a Global Two-Way Nest. *Journal of Advances in Modeling Earth Systems,* **13(6)**, https://doi.org/10.1029/2021MS002483

Boukabara, S., **Krasnopolsky, V.**, Penny, S. G., Stewart, J. Q., McGovern, A., Hall, D., Ten Hoeve, J. E., Hickey, J., Allen Huang, H., Williams, J. K., Ide, K., Tissot, P., Haupt, S. E., Casey, K. S., Oza, N., Geer, A. J., Maddy, E. S., and Hoffman, R. N., 2021: Outlook for Exploiting Artificial Intelligence in the Earth and Environmental Sciences, *Bull. Amer. Meteor. Soc.*, **102**, E1016-E1032. https://doi.org/10.1175/BAMS-D-20-0031.1

Brus, S. R., Wolfram, P.J., Van Roekel, L.P., and **Meixner, J.D.**, 2021: Unstructured global to coastal wave modeling for the Energy Exascale Earth System Model using WAVEWATCH III version 6.07. *Geosci. Model Dev.*, **14,** 2917-2938. https://doi.org/10.5194/gmd-14-2917-2021

Carley, J. R., M. Matthews, **M. T. Morris**, **M. S. F. V. De Pondeca**, J. Colavito, and **R. Yang**, 2021: Variational assimilation of web camera-derived estimates of visibility for Alaska aviation. *Experimental Results*, **2,** e14. http://dx.doi.org/10.1017/exp.2020.66

Deb, M., **Abdolali, A**, Kirby, J.T., Shi, F., Guiteras, S., McDowell, C., 2021: Sensitivity of tidal hydrodynamics to varying bathymetric configurations in a multi-inlet rapidly eroding salt marsh system: A numerical study. *Earth Surf Process Landforms*. 2021. https://doi.org/10.1002/esp.5308

Fan, Y., **V. Krasnopolsky**, H. van den Dool , C.-Y. Wu, and J. Gottschalck, 2021: Using Artificial Neural Networks to Improve CFS Week 3-4 Precipitation and 2-Meter Air Temperature Forecasts. *Wea. Forecasting*, **36**, https://doi.org/10.1175/WAF-D-20-0014.1

Hazelton, A., **Z. Zhang, B. Liu, J. Dong**, G. Alaka, **W. Wang**, T. Marchok, **A. Mehra**, S. Gopalakrishnan, X. Zhang, M. Bender, **V. Tallapragada**, and F. Marks, 2021: 2019

Atlantic Hurricane Forecasts from The Global-Nested Hurricane Analysis and Forecast System: Composite Statistics and Key Events. *Wea. Forecasting*, **36**, 519-538. https://doi.org/10.1175/WAF-D-20-0044.1

Huang, B., X. Wang, **D. T. Kleist**, and **T. Lei**, 2021: A simultaneous multiscale data assimilation using scale-dependent localization in GSI-based hybrid 4DEnVar for NCEP FV3-based GFS, *Mon. Wea. Rev.,* **149,** 479-501, https://doi.org/10.1175/MWR-D-20-0166.1

Ingleby, B., B. Candy, J. Eyre, T. Haiden, C. Hill, L. Isaksen, **D. Kleist**, F. Smith, P. Steinle, S. Taylor, W. Tennant, and C. Tingwell, 2021: The impacts of COVID-19 on weather forecasts: a balanced view, *Geophysical Res. Letters,* **48,** https://doi.org/10.1029/2020GL090699

Krishnamurthy, V., **Meixner, J.**, **Stefanova, L., Wang, J., Worthen, D.**, **Moorthi, S.**, **Bin, L.**, Sluka, T., and Stan, C., 2021: Sources of Subseasonal Predictability over CONUS during Boreal Summer. *J. Climate*, **34(9)**, 1372-1394. https://doi.org/10.1175/JCLI-D-20-0586.1

Li, J., **J. Du**, J. Xiong, and M. Wang, 2021: Perturbing Topography in a Convection-Allowing Ensemble Prediction System for Heavy Rain Forecasts. *JGR Atmopsheres*, **126(14)**, 1-20, https://doi.org/10.1029/2020JD033898

Mukhopadhyay, P., Bechtold, P., **Zhu, Y.**, Murali Krishna, R. P., Kumar, S., Ganai, M., Tirkey, S., Goswami, T., Mahakur, M., Deshpande, M., Prasad, V. S., Johny, C. J., Mitra, A., Ashrit, R., Sarkar, A., Sarkar, S., Roy, K., Andrews, E., Kanase, R., Malviya, S., Abhilash, S., Domkawale, M., Pawar, S. D., Mamgain, A., Durai, V. R., Nanjundiah, R. S., Mitra, A. K., Rajagopal, E. N., Mohapatra, M., & Rajeevan, M., 2021: Unraveling the Mechanism of Extreme (More than 30 Sigma) Precipitation during August 2018 and 2019 over Kerala, India, *Weather and Forecasting*, **36(4)**, 1253-1273. https://doi.org/10.1175/WAF-D-20-0162.1

Peters-Lidard, C. D., D. M. Mocko, L. Su, D. P. Lettenmaier, P. Gentine, and **M. Barlage**, 2021: Advances in Land Surface Models and Indicators for Drought Monitoring and Prediction. *Bull. Amer. Meteor. Soc.*, **102**, E1099-E1122. https://doi.org/10.1175/BAMS-D-20-0087.1

Qian, W.H., **J. Du**, and Y. Ai, 2021: A Review: anomaly-based versus full-field based weather analysis and forecasting. *Bull. Amer. Meteor. Soc*, **102**, E849-E870. https://doi.org/10.1175/BAMS-D-19-0297.1

Qian, W.H., Y. Ai, J.-Y. Yu, and **J. Du**, 2021: Opposite anomalous synoptic patterns for potential California large wildfire spread and extinguishing in 2018 cases. *Atmospheric Research*, **262**, 1-16, https://doi.org/10.1016/j.atmosres.2021.105804

Schwartz, C. S., J. Poterjoy, **J. R. Carley**, D. C. Dowell, G. S. Romine, and K. Ide, 2021: Comparing partial and continuously cycling ensemble Kalman filter data

assimilation systems for convection-allowing ensemble forecast initialization. *Wea. Forecasting*, **36**, https://doi.org/10.1175/WAF-D-21-0069.1

Tang, Y., H. Bian, Z. Tao, L. D. Oman, D. Tong, P. Lee, P. C. Campbell, B. Baker, C.-H. Lu, **L. Pan**, **J. Wang, J. McQueen**, and **I. Stajner**, 2021: Comparison of chemical lateral boundary conditions for air quality predictions over the contiguous United States during pollutant intrusion events. *Atmospheric Chemistry and Physics*, **21**, 2527-2550. https://acp.copernicus.org/articles/21/2527/2021/acp-21-2527-2021.html

Wang, Pengfei, Peng Wang, K. Chen, **J. Du**, and H. Zhang, 2021: Ground-level ozone simulation using ensemble WRF/Chem predictions over the Southeast United States, *Chemosphere*, **287(4)**. https://doi.org/10.1016/j.chemosphere.2021.132428

Wang, W., B. Liu, L. Zhu, **Z. Zhang, A. Mehra**, and **V. Tallapragada**, 2021: A New Horizontal Mixing-Length Formulation for Numerical Simulations of Tropical Cyclones. *Wea. Forecasting*, **36**, 679-695. https://doi.org/10.1175/WAF-D-20-0134.1

Williams, B., U. Kadri, and **A. Abdolali**, 2021: Acoustic–gravity waves from multi-fault rupture. *Journal of Fluid Mechanics*, **Volume 915,** A108. https://doi.org/10.1017/jfm.2021.101

Zhang, J., J. Feng, H. Li, **Y. Zhu**, X. Zhi, and F. Zhang, 2021: Unified Ensemble Mean Forecasting of Tropical Cyclones Based on the Feature-Oriented Mean Method. *Mon. Wea. Rev.*, **36(6)**, 1945-1959. https://doi.org/10.1175/WAF-D-21-0062.1

Zhang, Z., J. A. Zhang, G. J. Alaka, Jr., **K. Wu**, **A. Mehra**, and **V. Tallapragada,** 2021: A Statistical Analysis of High Frequency Track and Intensity Forecasts from NOAA's Operational Hurricane Weather Research and Forecast (HWRF) Modeling System, *Monthly Weather Review,* **149,** 3325-3339**.** https://doi.org/10.1175/MWR-D-21-0021.1

Zheng, M., L. D. Monache, B. D. Cornuelle, F. M. Ralph, **V. S. Tallapragada**, A. Subramanian, J.S. Haase, Z. Zhang, **X. Wu**, M. J. Murphy, T. B. Higgins, and L. DeHaan, 2021: Improved Forecast Skill Through the Assimilation of Dropsonde Observations From the Atmospheric River Reconnaissance Program. *JGR Atmospheres*, **126(21)**, https://doi.org/10.1029/2021JD034967

Zheng, M., L. D. Monache, **X. Wu**, F. M. Ralph, B. Cornuelle, **V. Tallapragada**, J. S. Haase, A. M. Wilson, M. Mazloff, A. Subramanian, and F. Cannon, 2021: Data Gaps within Atmospheric Rivers over the Northeastern Pacific. *Bull. Amer. Meteor. Soc.*, **102(3)**, E492–E524. https://doi.org/10.1175/BAMS-D-19-0287.1

Zhu, P., A. Hazelton, **Z. Zhang**, F. D. Marks, and **V. Tallapragada**, 2021: The Role of Eyewall Turbulent Transport in the Pathway to Intensification of Tropical Cyclones. *JGR Atmospheres*, **126(17)**, https://doi.org/10.1029/2021JD034983

2020

Abdolali, A., Roland, A., **Van Der Westhuysen, A., Meixner, J., Chawla, A**., Hesser, T., Smith, J.M. and M. Dutour Sikiric, 2020, Large-scale Hurricane Modeling Using Domain Decomposition Parallelization and Implicit Scheme Implemented in WAVEWATCH III Wave Model, *Coastal Engineering*, **157**, 103656, https://doi.org/10.1016/j.coastaleng.2020.103656

Alaka Jr., G.J., **D. Sheinin, B. Thomas**, L. Gramer, **Z. Zhang, B. Liu, H.-S. Kim** and **A. Mehra**, 2020: A Hydrodynamical Atmosphere/Ocean Coupled Modeling System for Multiple Tropical Cyclones. *Atmosphere*, **11**, 22 pp. https://www.mdpi.com/2073-4433/11/8/869/pdf

Bakhtyar, R., K. Maitaria, P. Velissariou, B. Trimble , H. Mashriqui, S. Moghimi, **A. Abdolali, A.J. Van der Westhuysen**, **Z. Ma**, T. Flowers (2020), A new 1D/2D Coupled Modeling Approach for a Riverine-Estuarine System under Storm Events: Application to Delaware River Basin, *Journal of Geophysical Research: Oceans*, https://doi.org/10.1029/2019JC015822

Black, T., 2020: A documentation of the NMMB's nesting capabilities and mechanisms. NOAA/NCEP Office Note 503. https://repository.library.noaa.gov/view/noaa/23887

Campos, R.M., **Alves, J.-H. G.**, Penny, S.G., and **V. Krasnopolsky**, 2020: Global assessments of the NCEP Ensemble Forecast System using altimeter data. *Ocean Dynamics*, **70**, 405–419 (2020). https://doi.org/10.1007/s10236-019-01329-4

Campos, R. M., **V. Krasnopolsky, J.-H. Alves**, S. G. Penny, 2020: Improving NCEP's global-scale wave ensemble averages using neural networks. *Ocean Modelling*, **149**, May 2020, https://doi.org/10.1016/j.ocemod.2020.101617

Cangialosi, J. P., E. Blake, M. DeMaria, A. Penny, A. Latto, E. Rappaport, and **V. Tallapragada**, 2020: Recent Progress in Tropical Cyclone Intensity Forecasting at the National Hurricane Center. *Wea. Forecasting*, **35**, 1913-1922. https://doi.org/10.1175/WAF-D-20-0059.1

Chen, J., J. Z. Wang, **J. Du**, 2020: Forecast bias correction through model integration: A dynamical wholesale approach. *Quart. J. Roy. Meteor. Soc.*, **146**, 1149-1168, https://doi.org/10.1002/qj.3730.

Dong, J., B. Liu, Z. Zhang, W. Wang, A. Mehra, A.T. Hazelton, **H.R. Winterbottom, L. Zhu, K. Wu**, **C. Zhang**, **V. Tallapragada**, X. Zhang, S. Gopalakrishnan, F. Marks, 2020: The Evaluation of Real-Time Hurricane Analysis and Forecast System (HAFS) Stand-Alone Regional (SAR) Model Performance for the 2019 Atlantic Hurricane Season. *Atmosphere 2020*, **11**, 617. https://doi.org/10.3390/atmos11060617

Hao, Z., W. Li, V. P. Singh, **Y. Xia**, X. Zhang, and F. Hao, 2020: Impact of dependence changes on the likelihood of hot extremes under drought conditions in the United States, *J. Hydrol.*, **581**, 124410, https://doi.org/10.1016/j.jhydrol.2019.124410.

He, X., T. Xu, **Y. Xia**, S. M. Bateni, Z. Guo, S. Liu, K. Mao, Y. Zhang, H. Feng, and J. Zhao, 2020: Bayesian Three-Cornered Hat (BTCH) Method: Improving the Terrestrial Evapotranspiration Estimation. *Remote Sens.,* **12**, 878. https://doi.org/10.3390/rs12050878

Hristova-Veleva, S. M., P. P. Li, B. Knosp, Q. Vu, F. J. Turk, W. L. Poulsen, Z. Haddad, B. Lambrigtsen, B. W. Stiles, T.-P. Shen, N. Niamsuwan, S. Tanelli, O. Sy, E.-K. Seo, H. Su, D. G. Vane, Yi Chao, P. S. Callahan, R. S. Dunbar, M. Montgomery, M. Boothe, **V. Tallapragada**, S. Trahan, A. J. Wimmers, R. Holz, J. S. Reid, F. Marks, T. Vukicevic, S. Bhalachandran, H. Leighton, S. Gopalakrishnan, A. Navarro, and F. J. Tapiador, 2020: An Eye on the Storm: Integrating a Wealth of Data for Quickly Advancing the Physical Understanding and Forecasting of Tropical Cyclones. *Bull. Amer. Meteor. Soc*, **101**, E1718-E1742. https://doi.org/10.1175/BAMS-D-19-0020.1

Lavers, D. A., N. B. Ingleby, A. C. Subramanian, D. S. Richardson, F. M. Ralph, J. D. Doyle, C. A. Reynolds, R. D. Torn, M. J. Rodwell, **V. Tallapragada**, and F. Pappenberger, 2020: Forecast Errors and Uncertainties in Atmospheric Rivers. *Wea. Forecasting*, **35**, 1447-1458. https://doi.org/10.1175/WAF-D-20-0049.1

Liu, Q., X. Zhang, M. Tong**, Z. Zhang, B. Liu, W. Wang, L. Zhu**, B. Zhang, X. Xu, S. Trahan, L. Bernardet, **A. Mehra**, and **V. Tallapragada**, 2020: Vortex Initialization in the NCEP Operational Hurricane Models. Atmosphere, 11(9), https://www.mdpi.com/2073-4433/11/9/968/pdf

Ma, Z., Liu, B., Mehra, A., Abdolali, A., van der Westhuysen, A., Moghimi, S.; Vinogradov, S., **Zhang, Z., Zhu, L., Wu, K., Shrestha, R.**; Kumar, A., **Tallapragada, V.**, Kurkowski, N., 2020: Investigating the Impact of High-Resolution Land–Sea Masks on Hurricane Forecasts in HWRF. *Atmosphere* 2020, *11*(9), 888, https://doi.org/10.3390/atmos11090888

Moghimi, S., **Van der Westhuysen, A., Abdolali, A**.; Myers, E.; Vinogradov, S.; **Ma, Z**.; Liu, F.; **Mehra, A**.; Kurkowski, N. (2020), Development of an ESMF Based Flexible Coupling Application of ADCIRC and WAVEWATCH III for High Fidelity Coastal Inundation Studies. *J. Mar. Sci. Eng.* 2020, 8, 308. https://doi.org/10.3390/jmse8050308

Morris, M. T., J. R. Carley, E. Colón, A. Gibbs, M. S. F. V. De Pondeca, and **S. Levine**, 2020: A Quality Assessment of the Real-Time Mesoscale Analysis (RTMA) for Aviation. *Wea. Forecasting*, **35**, 977–996, https://doi.org/10.1175/WAF-D-19-0201.1.

Pan, L., Kim, H., Lee, P., Saylor, R., Tang, Y., Tong, D., Baker, B., Kondragunta, S., Xu, C., Ruminski, M. G., Chen, W., **McQueen, J.**, and **Stajner, I**., 2020: Evaluating a fire smoke simulation algorithm in the National Air Quality Forecast Capability (NAQFC)

by using multiple observation data sets during the Southeast Nexus (SENEX) field campaign, *Geosci. Model Dev.*, **13**, 2169–2184, https://doi.org/10.5194/gmd-13-2169-2020.

Potvin, C.K., **J.R. Carley**, A.J. Clark, L.J. Wicker, P.S. Skinner, A.E. Reinhart, B.T. Gallo, **J.S. Kain**, G.S. Romine, **E.A. Aligo**, K.A. Brewster, D.C. Dowell, L.M. Harris, I.L. Jirak, F. Kong, T.A. Supinie, K.W. Thomas, X. Wang, Y. Wang, and M. Xue, 2019: Systematic Comparison of Convection-Allowing Models during the 2017 NOAA HWT Spring Forecasting Experiment. *Wea. Forecasting*, **34**, 1395–1416, https://doi.org/10.1175/WAF-D-19-0056.1.

Potvin, C.K., P.S. Skinner, K.A. Hoogewind, M.C. Coniglio, J.A. Gibbs, A.J. Clark, M.L. Flora, A.E. Reinhart, **J.R. Carley**, and E.N. Smith, 2020: Assessing Systematic Impacts of PBL Schemes on Storm Evolution in the NOAA Warn-on-Forecast System. *Mon. Wea. Rev.*, **148**, 2567–2590, https://doi.org/10.1175/MWR-D-19-0389.1.

Purser, R.J., 2020: Description and some formal properties of beta filters; compact support quasi-Gaussian convolution operators with applications to the construction of spatial covariances. NOAA/NCEP Office Note 498. https://repository.library.noaa.gov/view/noaa/23195

Purser, R.J., 2020: A formulation of the hexad algorithm using the geometry of the Fano projective plane. NOAA/NCEP Office Note 499. https://repository.library.noaa.gov/view/noaa/23059

Purser, R.J., 2020: A formulation of the decad algorithm using the symmetries of the Galois field, GF(16). NOAA/NCEP Office Note 500. https://repository.library.noaa.gov/view/noaa/23060

Purser, R.J., 2020: Solving the Laplace equation in a right-angled bicorn and constructing smooth functions for conformal overset grids. NOAA/NCEP Office Note 501. https://repository.library.noaa.gov/view/noaa/23441

Ralph, F. M., F. Cannon, **V. Tallapragada**, C. A Davis, J. D. Doyle, F. Pappenberger, A. Subramanian, A. M. Wilson, D. A. Lavers, C. A Reynolds, J. S. Haase, L. Centurioni, B. Ingleby, J. J. Rutz, J. M. Cordeira, M. Zheng, C. Hecht, B. Kawzenuk, and L. D. Monache, 2020: West Coast forecast challenges and development of atmospheric river reconnaissance. Bull. Amer. Meteor. Soc, 101, E1357–E1377. https://doi.org/10.1175/BAMS-D-19-0183.1

Rateb, A., B. R. Scanlon, D. R. Pool, A. Sun, Z. Zhang, J. Chen, B. Clark, C. C. Faunt, C. J. Haugh, M. Hill, C. Hobza, V. L. McGuire, M. Reitz, H. M. Schmied, E. H. Sutanudjaja, S. Swenson, D. Wiese, **Y. Xia**, and W. Zel, 2020: Comparison of groundwater storage changes from GRACE satellites with monitoring and modeling of major U.S. aquifers, *Water Resour. Res.*, **56**, e2020WR027556. https://doi.org/10.1029/2020WR027556.

Sawada, M., Z. Ma, **A. Mehra, V. Tallapragada**, R. Oyama, K. Shimoji, 2020: Assimilation of Himawari-8 rapid-scan atmospheric motion vectors on tropical cyclone in HWRF system. *Atmosphere 2020*, **11**, 601, https://www.mdpi.com/2073-4433/11/6/601/pdf

Tang, Y., D. Q. Tong, K. Yang, P. Lee, B. Baker, A. Crawford, W. Luke, A. Stein, P. C. Campbell, A. Ring, J. Flynn, Y. Wang, **J. McQueen**, Li Pan, J. Huang, and **I. Stajner**, 2020: Air quality impacts of the 2018 Mt. Kilauea Volcano eruption in Hawaii: A regional chemical transport model study with satellite-constrained emissions. Atmospheric Environment, 237, https://doi.org/10.1016/j.atmosenv.2020.117648.

Tong, M., Yanqiu Zhu, L. Zhou, E. Liu, M. Chen, Q. Liu, and S.-J. Lin, 2020: Multiple Hydrometeors All-Sky Microwave Radiance Assimilation in FV3GFS. *Mon. Wea. Rev.*, **148**, 2971-2995. https://doi.org/10.1175/MWR-D-19-0231.1

Wick, G. A., J. P. Dunion, P. G. Black, J. R. Walker, R. D. Torn, A. C. Kren, A. Aksoy, H. Christophersen, L. Cucurull, B. Dahl, J. M. English, **K. Friedman**, T. R. Peevey, K. Sellwood, J. A. Sippel, **V. Tallapragada**, J. Taylor, H. Wang, R. E. Hood, and P. Hall, 2020: NOAA's Sensing Hazards with Operational Unmanned Technology (SHOUT) Experiment Observations and Forecast Impacts. *Bull. Amer. Meteor. Soc*, **101**, E968-E987. https://doi.org/10.1175/BAMS-D-18-0257.1

Yang, R., R. J. Purser, J. R. Carley, M. Pondeca, Yanqiu Zhu, and S. Levine, 2020: Application of a Nonlinear Transformation Function to the Variational Analysis of Visibility and Ceiling Height. NCEP Office Note 502. 36 pp. https://repository.library.noaa.gov/view/noaa/23885

Zhang, B., Y. Xia, B. Long, M. Hobbins, X. Zhao, C. Hain, Y. Li, and M. Anderson, 2020: Evaluation and comparison of multiple evapotranspiration data models over the contiguous United States: Implications for the next phase of NLDAS (NLDAS-Testbed) development, *Agri. Forest Meteor.*, **280**, https://doi.org/10.1016/j.agrformet.2019.107810

Zhang, Z., M. Tong, J. A. Sippel, **A. Mehra**, B. Zhang, K. Wu, B. Liu, J. Dong, Z. Ma, H. Winterbottom, W. Wang, L. Zhu, **Q. Liu**, H.-S. Kim, B. Thomas, D. Sheinin, L. Bi, **and V. Tallapragada**, 2020 : The Impact of Stochastic Physics-Based Hybrid GSI/EnKF Data Assimilation on Hurricane Forecasts Using EMC Operational Hurricane Modeling System, *Atmosphere*, **11,** 20 pp. https://www.mdpi.com/2073-4433/11/8/801/pdf

2019

Abdolali, A., Kadri, U. & J.T. Kirby, 2019, Effect of Water Compressibility, Sea-floor Elasticity, and Field Gravitational Potential on Tsunami Phase Speed, Scientific Reports, *Nature*, https://www.nature.com/articles/s41598-019-52475-0

Alaka, G. J, Jr., X. Zhang, S. G. Gopalakrishnan, **Z. Zhang**, F. D. Marks, and R. Atlas, 2019: Track Uncertainty in High-Resolution HWRF Ensemble Forecasts of Hurricane Joaquin. *Wea. Forecasting*, **34**, 1889-1908. https://doi.org/10.1175/WAF-D-19-0028.1

An, N., R.T. Pinker, K. Wang, **E. Rogers**, and Z. Zuo, 2019: Evaluation of cloud base height in the North American Regional Reanalysis using ceilometer observations. *International Journal of Climatology*, https://rmets.onlinelibrary.wiley.com/doi/full/10.1002/joc.6389

Boukabara, S.-A., **V. Krasnopolsky**, J. Q. Stewart, E. S. Maddy, N. Shahroudi, and R. N. Hoffman, 2019: Leveraging Modern Artificial Intelligence for Remote Sensing and NWP: Benefits and Challenges. *Bull. Amer. Meteor. Soc.*, **100**, ES473-ES491. https://doi.org/10.1175/BAMS-D-18-0324.1

Bender, M. A., T. Marchok, R. E. Tuleya, I. Ginis, **V. Tallapragada**, and S. J. Lord, 2019: Hurricane Model Development at GFDL: A Collaborative Success Story from a Historical Perspective. *Bull. Amer. Meteor. Soc.*, **100**, 1725-1736.

Campos, R. M., **V. Krasnopolsky, J.-H. GM Alves**, S. G Penny, 2019: Nonlinear wave ensemble averaging in the Gulf of Mexico using neural networks. *J. Atmos. Oceanic Tech.*, **36(1)**, 113-127. https://doi.org/10.1175/JTECH-D-18-0099.1

Chen, S.-C., J. Benoit, J. Ritchie, Y. Zhang, **H.-M. H. Juang,** Y.-J. Chen, and T. Rolinski, 2019: FireBuster—A web application for high-resolution fire weather modeling. *USDA General Technical Report PSW-GTR264,* 22 pp. https://www.fs.usda.gov/treesearch/pubs/all/58247

Crow, W., F. Chen, R. Reichle, and **Y. Xia**, 2019: Diagnosing bias in modeled soil moisture/runoff coupling strength using the SMAP Level 4 soil moisture product. *Water Resources Research*, **55,** 7010– 7026. https://doi.org/10.1029/2019WR025245

Cui, Z., Z. Pu, **V. Tallapragada**, R. Atlas, C. S. Ruf, 2019: A Preliminary Impact Study of CYGNSS Ocean Surface Wind Speeds on Numerical Simulations of Hurricanes. Geophysical Resesrch Letters, 46(5), 2984-2992. https://doi.org/10.1029/2019GL082236

Domingues. R., Akira Kuwano-Yoshida, Patricia Chardon-Maldonado, Robert E Todd, George Robert Halliwell, **Hyun-Sook Kim**, I-I Lin, Katsufumi Sato, Tomoko Narazaki, Lynn K. Shay, Travis Miles, Scott Glenn, Jun A. Zhang, Steven Robert Jayne, Luca R Centurioni, Matthieu Le Hénaff, Gregory Foltz, Francis Bringas, MM Ali, Steven DiMarco, Shigeki Hosoda, Takuya Fukuoka, Benjamin LaCour, **Avichal Mehra**, Elizabeth R. Sanabia, John R. Gyakum, **Jili Dong**, John Knaff, Gustavo Jorge Goni, 2019: Ocean Observations in Support of Studies and Forecasts of Tropical and Extratropical Cyclones, *Frontiers in Marine Science*. https://doi.org/10.3389/fmars.2019.00446

Du, J., B. Zhou, and J. Levit, 2019: Measure of Forecast Challenge and Predictability Horizon Diagram Index for Ensemble Models. *Wea. Forecasting*, **34**, 603–615, https://doi.org/10.1175/WAF-D-18-0114.1.

Duda, J. D., X. Wang, Y. Wang, and **J. R. Carley**, 2019: Comparing the Assimilation of Radar Reflectivity Using the Direct GSI-Based Ensemble–Variational (EnVar) and Indirect Cloud Analysis Methods in Convection-Allowing Forecasts over the Continental United States. *Mon. Wea. Rev.*, **147**, 1655–1678, https://doi.org/10.1175/MWR-D-18-0171.1.

Gehne, M., T. M. Hamill, G. T. Bates, P. Pegion, and **W. Kolczynski**, 2019: Land Surface Parameter and State Perturbations in the Global Ensemble Forecast System. *Mon. Wea. Rev.*, **147**, 1319-1340. https://doi.org/10.1175/MWR-D-18-0057.1

Guan, H., **Yuejian Zhu**, **E. Sinsky**, **W. Li**, **X. Zhou**, **D. Hou**, **C. Melhauser** and **R. Wobus**, 2019: Systematic Error Analysis and Calibration of 2-m Temperature for the NCEP GEFS Reforecast of Subseasonal Experiment (SubX) Project. *Wea. Forecasting*, **34**, 361-376. https://doi.org/10.1175/WAF-D-18-0100.1

Han, J. and C. S. Bretherton, 2019: TKE-Based Moist Eddy-Diffusivity Mass-Flux (EDMF) Parameterization for Vertical Turbulent Mixing. *Wea. Forecasting*, **34**, 869-886. https://doi.org/10.1175/WAF-D-18-0146.1

He, B., P. Liu, **Yuejian Zhu**, W. Hu, 2019: Prediction and predictability of Northern Hemisphere persistent maxima of 500-hPa geopotential height eddies in the GEFS. *Clim. Dyn.*, **52,** 3773–3789 (2019). https://doi.org/10.1007/s00382-018-4347-4

Janjic, Z., 2019: The Surface Layer Parameterization in the NMM Models. NCEP Office Note #497

Li, W., **Yuejian Zhu**, **X. Zhou**, **D. Hou**, **E. Sinsky**, **C. Melhauser**, **M. Pena**, **H. Guan** and **R. Wobus**, 2019: Evaluating the MJO Forecast Skill from Different Configurations of NCEP GEFS Extended Forecast. *Climate Dynamics*, **52**, 4923–4936. https://doi.org/10.1007/s00382-018-4423-9

Liao, W., D. Wang, G. Wang, and **Y. Xia**, 2019: Evaluation and Generation Process of the Quality-controlled Daily *in Situ* Soil Moisture in North American Soil Moisture Database. *J. Meteorological Research*, **33**, 501-519.

Lim, A. H. N., J. A. Jung, S. E. Nebuda, J. M. Daniels, W. Bresky, M. Tong, and **V. Tallapragada**, 2019: Tropical Cyclone Forecasts Impact Assessment from the Assimilation of Hourly Visible, Shortwave, and Clear-Air Water Vapor Atmospheric Motion Vectors in HWRF. *Wea. Forecasting*, **34**, 177-198. https://doi.org/10.1175/WAF-D-18-0072.1

Lippi, D. E., **J. R. Carley, and D. T. Kleist**, 2019: Improvements to the Assimilation of Doppler Radial Winds for Convection-Permitting Forecasts of a Heavy Rain Event. *Mon. Wea. Rev.*, **147**, 3609–3632, https://doi.org/10.1175/MWR-D-18-0411.1.

Lu, K., C. Wang, **K. Wu**, M. Gong, Y, and Y. Wang, 2019: A unified framework for exploring time-varying volumetric data based on block correspondence. *Visual Informatics*, Volume 3, Issue 4, 2019, 157-165, https://www.sciencedirect.com/science/article/pii/S2468502X19300464?via%3Dihub

Nguyen, T. V., K. V. Mai, P. N. B. Nguyen, **H.-M. H. Juang**, D. V. Nguyen, 2019: Evaluation of summer monsoon climate predictions over the Indochina peninsula using regional spectral model. *Weather and Climate Extremes*, **23** (2019) 100195, 14 pp. https://www.sciencedirect.com/science/article/pii/S2212094718301415

Papangelis, K, D. Potena, W. W. Smari, E. Storti, and **K. Wu**, 2019: Advanced technologies and systems for collaboration and computer supported cooperative work. *Future Generation Computer Systems*, **95**, 2019, Pages 764-774, https://doi.org/10.1016/j.future.2019.02.041.

Pegion, K., B. P. Kirtman, E. Becker, D. C. Collins, E. LaJoie, R. Burgman, R. Bell, T. DelSole, D. Min, **Yuejian Zhu**, **W. Li**, **E. Sinsky**, **H. Guan**, J. Gottschalck, E. J. Metzger, N. P Barton, D. Achuthavarier, J. Marshak, R. D. Koster, H. Lin, N. Gagnon, M. Bell, M. K. Tippett, A. W. Robertson, S. Sun, S. G. Benjamin, B. W. Green, R. Bleck, and H. Kim, 2019: The Subseasonal Experiment (SubX): A Multimodel Subseasonal Prediction Experiment. *Bull. Amer. Meteor. Soc.*, **100**, 2043-2060. https://doi.org/10.1175/BAMS-D-18-0270.1

Potvin, C. K., **J. R. Carley**, A. J. Clark, L. J. Wicker, P. S. Skinner, A. E. Reinhart, B. T. Gallo, **J. S. Kain**, G. S. Romine, **E. A. Aligo**, K. A. Brewster, D. C. Dowell, L. M. Harris, I. L. Jirak, F. Kong, T. A. Supinie, K. W. Thomas, X. Wang, Y. Wang, and M. Xue, 2019: Systematic Comparison of Convection-Allowing Models during the 2017 NOAA HWT Spring Forecasting Experiment. *Wea. Forecasting*, **34**, 1395-1416. https://doi.org/10.1175/WAF-D-19-0056.1

Pu, Z., C. Yu, **V. Tallapragada**, J. Jin, and W. McCarty, 2019: The Impact of Assimilation of GPM Microwave Imager Clear-Sky Radiance on Numerical Simulations of Hurricanes Joaquin (2015) and Matthew (2016) with the HWRF Model. *Mon. Wea. Rev.*, **147**, 175-198. https://doi.org/10.1175/MWR-D-17-0200.1

Pyle, M. E. and K. F. Brill, 2019: A Comparison of Two Methods for Bias Correcting Precipitation Skill Scores. *Wea. Forecasting*, **34**, 3-13. https://doi.org/10.1175/WAF-D-18-0109.1

Slivinski, L. C., G. P. Compo, J. S. Whitaker, P. D. Sardeshmukh, J.-W. A. Wang, **K. Friedman**, and C. McColl, 2019: What Is the Impact of Additional Tropical Observations

on a Modern Data Assimilation System? *Mon. Wea. Rev.*, **147**, 2433-2449. https://doi.org/10.1175/MWR-D-18-0120.1

Xu, T, Z. Guo. **Y. Xia**, V.J. Ferriera, S. Liu, K. Wang, Y. Yao, X. Zhang, and C. Zhao, 2019: Evaluation of twelve evapotranspiration products from machine learning, remote sensing and land surface models over conterminous United States, *J. Hydrol.*, **578**, https://doi.org/10.1016/j.jhydrol.2019.124105.

Xia, Y., Z. Hao, C. Shi, Y. Li, **J. Meng**, T. Xu, Y. Wu, and B. Zhang, 2019: Regional and Global Land Data Assimilation Systems: Innovations, Challenges, and Prospects. *J. Meteorological Research*, **33**, 159-189.

Xia, Y**.**, J. Chen, **J. Du**, X. Zhi, J. Wang, and X. Li, 2019: A unified scheme of stochastic physics and bias correction in an ensemble model to reduce both random and systematic errors. *Wea. Forecasting*, **34**, 1675-1691, https://journals.ametsoc.org/doi/pdf/10.1175/WAF-D-19-0032.1

Zhang, B., **Y. Xia**, L.S. Hunting, G. Wei, G. Wang, and A. Aghakouchak, 2019: A framework for global multi-category and multi-scalar drought characterization accounting for snow processes, *Water Resour. Res.*, **55** (11), 9258-9278. https://doi.org/10.1029/2019WR025529

Zhang, B., G. Liu, **Yuejian Zhu**, N. Shi, 2019: Frequency of Persistent Blocking and Ridge Events Related to Precipitation over Eastern China during August and Its Preceding Atmospheric Signals. *Wea. Forecasting*, **34(6)**, 1705-1719. https://doi.org/10.1175/WAF-D-19-0047.1

Zhu, Yanqiu, G. Gayno, R. J. Purser, X. Su, and **R. Yang**, 2019: Expansion of the All-Sky Radiance Assimilation to ATMS at NCEP. *Mon. Wea. Rev*, **147**, 2603-2620. https://doi.org/10.1175/MWR-D-18-0228.1

Zhu, Yuejian, W. Li, X. Zhou, and D. Hou, 2019: Stochastic Representation of NCEP GEFS to Improve Subseasonal Forecasts. *Current trends in the Representation of Physical Processes in Weather and Climate Models*, Editors: Randall, D.A., Srinivasan, J., Nanjundiah, R.A., Mukhopadhyay, P. Springer Atmospheric Sciences, 317-328

2018

Abdolali, A., Kadri, U., Parsons, W., and Kirby, J., 2018, On the propagation of acoustic–gravity waves under elastic ice sheets. *Journal of Fluid Mechanics*, 837, 640-656. https://doi.org/10.1017/jfm.2017.808

Aligo, E., B. Ferrier, and **J. Carley**, 2018: Modified NAM Microphysics for Forecasts of Deep Convective Storms. *Mon. Wea. Rev*, **146**, 4115-4153. https://doi.org/10.1175/MWR-D-17-0277.1

Banta, R. M, Y. L. Pichugina, W. A. Brewer, E. P. James, J. B. Olson, S. G. Benjamin, J. R. Carley, L. Bianco, I. V. Djalalova, J. M. Wilczak, R. M. Hardesty, J. Cline, and M. C. Marquis, 2018: Evaluating and Improving NWP Forecast Models for the Future: How the Needs of Offshore Wind Energy Can Point the Way. *Bull. Amer. Meteor. Soc*, **99**, 1155-1176. https://doi.org/10.1175/BAMS-D-16-0310.1

Bhattacharjee, P. S., J. Wang, C.-H. Lu, and V. Tallapragada, 2018: The implementation of NEMS GFS Aerosol Component (NGAC) Version 2.0 for global multispecies forecasting at NOAA/NCEP-Part 2: Evaluation of aerosol optical thickness. *Geosci. Model Dev.*, **11**, 2333–2351, 2018. https://doi.org/10.5194/gmd-11-2333-2018

Buizza, R., J. Du, Z. Toth, and D. Hou, 2018: Major operational ensemble prediction systems (EPS) and the future of EPS. Handbook of Hydrometeorological Ensemble Forecasting (edited by Q. Duan et al.), Springer, Berlin, Heidelberg, pp 1-43, https://doi.org/10.1007/978-3-642-40457-3_14-1

Campos, R. M., J.-H. G. M. Alves, S. G. Penny, and V. Krasnopolsky, 2018: Assessments of Surface Winds and Waves from the NCEP Ensemble Forecast System. *Wea. Forecasting*, **33**, 1533-1546. https://doi.org/10.1175/WAF-D-18-0086.1

Chen, S.-P., C.-H. Lu, J. McQueen, and P. Lee, 2018: Application of satellite observations in conjunction with aerosol reanalysis to characterize long-range transport of African and Asian dust on air quality in the contiguous US. *Atmospheric Environment*, **187**, August 2018, 174-195. https://doi.org/10.1016/j.atmosenv.2018.05.038

Clark, A. J., I. L. Jirak, S. R. Dembek, G. J. Creager, F. Kong, K. W. Thomas, K. H. Knopfmeier, B. T. Gallo, C. J. Melick, M. Xue, K. A. Brewster, Y. Jung, A. Kennedy, X. Dong, J. Markel, M. Gilmore, G. S. Romine, K. R. Fossell, R. A. Sobash, J. R. Carley, B. S. Ferrier, M. Pyle, C. R. Alexander, S. J. Weiss, J. S. Kain, L. J. Wicker, G. Thompson, R. D. Adams-Selin, and D. A. Imy, 2018: The Community Leveraged Unified Ensemble (CLUE) in the 2016 NOAA/Hazardous Weather Testbed Spring Forecasting Experiment. *Bull. Amer. Meteor. Soc.*, **99**, 1433-1448. https://doi.org/10.1175/BAMS-D-16-0309.1

Crow, W. T., Chen, F., Reichle, R. H., Xia, Y., & Liu, Q., 2018: Exploiting soil moisture, precipitation, and streamflow observations to evaluate soil moisture/runoff coupling in land surface models. *Geophysical Research Letters*, **45**, 4869–4878. https://doi.org/10.1029/2018GL077193

Chuang, H.-Y., Y. Mao, and B. Zhou, 2018: R2O Transition of NCAR's Icing and Turbulence Algorithms into NCEP's Operations. *Pure and Applied Geophysics*, **176**, 2057–2079(2019). https://link.springer.com/article/10.1007/s00024-018-1975-x

Dirmeyer, P. A., L. Chen, J. Wu, C.-S. Shin, B. Huang, B. A. Cash, M. G. Bosilovich, S. Mahanama, R. D. Koster, J. A. Santanello, M. B. Ek, G. Balsamo, E. Dutra, and D. M. Lawrence, 2018: Verification of Land–Atmosphere Coupling in Forecast Models,

Reanalyses, and Land Surface Models Using Flux Site Observations. *J. Hydrometeor*., **19(2)**, 375-392. https://doi.org/10.1175/JHM-D-17-0152.1.

Du, J., J. Berner, R. Buizza, M. Charron, P. Houtekamer, **D. Hou**, I. Jankov, M. Mu, X. Wang, **M. Wei**, and H. Yuan, 2018: Ensemble methods for meteorological predictions. Handbook of Hydrometeorological Ensemble Forecasting (edited by Q. Duan et al.), Springer, Berlin, Heidelberg, pp 1-52, https://doi.org/10.1007/978-3-642-40457-3_13-1

Gustafsson, Nils, T. Janjić, C. Schraff, D. Leuenberger, M. Weissmann, H. Reich, P. Brousseau, T. Montmerle, E. Wattrelot, A. Bučánek, M. Mile, R. Hamdi, M. Lindskog, J. Barkmeijer, M. Dahlbom, B. Macpherson, S. Ballard, G. Inverarity, **J. Carley**, C. Alexander, D. Dowell, **S. Liu**, Y. Ikuta, and T. Fujita, 2018: Survey of data assimilation methods for convective-scale numerical weather prediction at operational centres. *Q. J. R. Meteorol. Soc.*, **144**, 1218–1256. https://rmets.onlinelibrary.wiley.com/doi/pdfdirect/10.1002/qj.3179

Hao, Z., F. Hao, VP Singh, **Y. Xia**, C. Shi, and X. Zhang, 2018: A multivariate approach for statistical assessments of compound extremes. *J. Hydrol.*, **565**, 87-94. https://doi.org/10.1016/j.jhydrol.2018.08.025

Hao, Z., Singh, V. P., and **Xia, Y.,** 2018: Seasonal drought prediction: Advances, challenges, and future prospects. *Reviews of Geophysics*, **56**, 108–141. https://doi.org/10.1002/2016RG000549

Hicks, B. B., W. R. Pendergrass, B. D. Baker, R. D. Saylor, D. L. O'Dell, N. S. Eash, and **J. T. McQueen**, 2018: On the Relevance of $\ln(z_0/z_{0T})=k\mathrm{B}^{-1}$. *Boundary-Layer Meteorol*. **167,** 285–301 (2018). https://doi.org/10.1007/s10546-017-0322-6

Hoffman, V. K. Kumar, S.-A. Boukabara, K. Ide, **F. Yang**, and R. Atlas, 2018: Progress in Forecast Skill at Three Leading Global Operational NWP Centers during 2015–17 as Seen in Summary Assessment Metrics (SAMs). *Wea. Forecasting*, **33**, 1661-1679. https://doi.org/10.1175/WAF-D-18-0117.1

Krasnopolsky, V., S. Nadiga, A. Mehra, and E. Bayler, 2018: Adjusting Neural Network to a Particular Problem: Neural Network-Based Empirical Biological Model for Chlorophyll Concentration in the Upper Ocean", *Applied Computational Intelligence and Soft Computing*, vol. 2018, Article ID 7057363, 10 pages, 2018. https://doi.org/10.1155/2018/7057363

Kieu, C, K. Keshavamurthy, **V. Tallapragada**, S. Gopalakrishnan, **S. Trahan**, 2018: On the growth of intensity forecast errors in the operational hurricane weather research and forecasting (HWRF) model. *Quart. J. Roy. Meteor. Soc*, **144**, 1803-1819. https://doi.org/10.1002/qj.3344

Lavers, D. A., M. J. Rodwell, D. S. Richardson, F. M. Ralph, J. D. Doyle, C. A. Reynolds, **V. Tallapragada**, and F. Pappenberger, 2018: The Gauging and Modeling of

Rivers in the Sky. *Geophysical Research Letters*, **45(15)**, 7828-7834. https://doi.org/10.1029/2018GL079019

Leighton, H., S. Gopalakrishnan, J. A. Zhang, R. F. Rogers, **Z. Zhang**, and **V. Tallapragada**, 2018: Azimuthal distribution of deep convection, environmental factors, and tropical cyclone rapid intensification: A perspective from HWRF ensemble forecasts of Hurricane Edouard (2014). *J. Atmos. Sci*, **75(1)**, 275–295. https://doi.org/10.1175/JAS-D-17-0171.1

Liu, P., **Yuejian Zhu**, Q. Zhang, J. Gottschalck, M. Zhang, **C. Melhauser, W. Li, H. Guan, X. Zhou**, **D. Hou, M. Peña**, G. Wu, Y. Liu, L. Zhou, B. He, W. Hu, and R. Sukhdeo, 2018: *Clim. Dyn.*, **51,** 701–717 (2018). https://doi.org/10.1007/s00382-017-3950-0

Mehra, A., Tallapragada, V., Zhang, Z., Liu, B., Zhu, L., Wang, W., Kim, H.S., 2018: Advancing the State of the Art in Operational Tropical Cyclone Forecasting at NCEP. *Tropical Cyclone Research and Review*, **7(1)**, 51–56.

Purser, R.J., 2018: Hilbert Curves Isometrically Filling a Spherical Shell, and their Application to the Estimation of Spatial Data Density. NCEP Office Note #494

Purser, R.J., 2018: Convenient Parameterizations of Super-Logistic Probability Models of Effective Observation Error. NCEP Office Note #495

Purser, R.J., 2018: Mobius Net Cubed-Sphere Gnomonic Grids. NCEP Office Note #496

Santanello, J. A., Jr., P. A. Dirmeyer, C. R. Ferguson, K. L. Findell, A. B. Tawfik, A. Berg, **M. Ek**, P. Gentine, B. P. Guillod, C. van Heerwaarden, J. Roundy, and V. Wulfmeyer, 2018: Land–Atmosphere Interactions: The LoCo Perspective. *Bull. Amer. Meteor. Soc*, **99**, 1253–1272. https://doi.org/10.1175/BAMS-D-17-0001.1

Schröder, M., M. Lockhoff, F. Fell, J. Forsythe, T. Trent, R. Bennartz, E. Borbas, M. G. Bosilovich, E. Castelli, H. Hersbach, M. Kachi, S. Kobayashi, E. R. Kursinski, D. Loyola, C. Mears, R. Preusker, W. B. Rossow, and **S. Saha**, 2018: The GEWEX Water Vapor Assessment archive of water vapour products from satellite observations and reanalyses. *Earth Syst. Sci. Data*, **10**, 1093–1117, 2018. https://doi.org/10.5194/essd-10-1093-2018

Song, X., **Yuejian Zhu, J. Peng,** and **H. Guan**, 2018: Improving Multi-Model Ensemble Forecasts of Tropical Cyclone Intensity Using Bayesian Model Averaging. *J. Meteor. Res.*, **32(5)**: 794-803. doi: 10.1007/s13351-018-7117-7

Sun, A.Y., **Y. Xia**, T.G. Caldwell, and Z. Hao, 2018: Patterns of precipitation and soil moisture extremes in Texas, US: A complex network analysis, *Adv. Water Resour.*, **112**, 203-213. https://doi.org/10.1016/j.advwatres.2017.12.019

Tong, M., J. A. Sippel, **V. Tallapragada**, **E. Liu**, **C. Kieu, I.-H. Kwon, W. Wang,** Q. Liu, **Y. Ling**, and **B. Zhang**, 2018: Impact of Assimilating Aircraft Reconnaissance Observations on Tropical Cyclone Initialization and Prediction Using Operational HWRF and GSI Ensemble–Variational Hybrid Data Assimilation. Mon. Wea. Rev., 146, 4155-4177. https://doi.org/10.1175/MWR-D-17-0380.1

Tyner, B., P. Zhu, J. A. Zhang, S. Gopalakrishnan, F. Marks Jr, and **V. Tallapragada**, 2018: A top-down pathway to secondary eyewall formation in simulated tropical cyclones. JGR Atmospheres, 123(1), 174-197. https://doi.org/10.1002/2017JD027410

Wang, J., J. Chen, **J. Du**, Y. Zhang, Y. Xia; G. Deng, 2018: Sensitivity of Ensemble Forecast Verification to Model Bias. *Mon. Wea. Rev.*, **146**, 781–&96, https://doi.org/10.1175/MWR-D-17-0223.1

Wang, J., P. S. Bhattacharjee, V. Tallapragada, C.-H. Lu, S. Kondragunta, A. da Silva, X. Zhang, S.-P. Chen, S.-W. Wei, A. S. Darmenov, **J. McQueen**, P. Lee, P. Koner, and A. Harris, 2018: The implementation of NEMS GFS Aerosol Component (NGAC) Version 2.0 for global multispecies forecasting at NOAA/NCEP – Part 1: Model descriptions. *Geosci. Model Dev.*, **11**, 2315–2332, 2018. https://doi.org/10.5194/gmd-11-2315-2018

Wang, W., **J. A. Sippel, S. Abarca, L. Zhu, B. Liu, Z. Zhang**, A. Mehra, and V. **Tallapragada**, 2018: Improving NCEP HWRF Simulations of Surface Wind and Inflow Angle in the Eyewall Area. *Wea. Forecasting*, **33**, 887–898, https://doi.org/10.1175/WAF-D-17-0115.1

Xia, Y., D.M. Mocko, S. Wang, M. Pan, S. V. Kumar, C. D. Peters-Lidard, **H. Wei**, D. Wang, and **M.B. Ek**, 2018: Comprehensive Evaluation of the Variable Infiltration Capacity (VIC) Model in the North American Land Data Assimilation System, *J. Hydrometeor.*, **19(11)**, 1853-1879. https://doi.org/10.1175/JHM-D-18-0139.1

Xu, T., Guo, Z., Liu, S., He, X., Meng, Y., Xu, Z., **Xia, Y.**, J. Xiao, Y. Zhang, Y. Ma, and L. Song, 2018: Evaluating different machine learning methods for upscaling evapotranspiration from flux towers to the regional scale. *Journal of Geophysical Research: Atmospheres*, **123**, 8674–8690. https://doi.org/10.1029/2018JD028447

Xue, Y. I. Diallo, W. Li, J. D. Neelin, P. C. Chu, **R. Vasic**, W. Guo, Q. Li, D. A. Robinson, **Yuejian Zhu**, C. Fu, C. M. Oaida, 2018: Spring Land Surface and Subsurface Temperature Anomalies and Subsequent Downstream Late Spring-Summer Droughts/Floods in North America and East Asia. *JGR Atmospheres*, **123(10)**, 5001-5019. https://doi.org/10.1029/2017JD028246

Zhang, J. A., F. D. Marks, J. A. Sippel, R. F. Rogers, X. Zhang, S. G. Gopalakrishnan, **Z. Zhang**, and **V. Tallapragada**, 2018: Evaluating the Impact of Improvement in the Horizontal Diffusion Parameterization on Hurricane Prediction in the Operational Hurricane Weather Research and Forecast (HWRF) Model. *Wea. Forecasting*, **34**, 317-329. https://doi.org/10.1175/WAF-D-17-0097.1

Zheng, W., X. Zhan, J. J. Liu, and **M. Ek**, 2018: A Preliminary Assessment of the Impact of Assimilating Satellite Soil Moisture Data Products on NCEP Global Forecast System. *Advances in Meteorology*, vol. 2018, Article ID 7363194, 12 pages, 2018. https://doi.org/10.1155/2018/7363194

Zhu, Yuejian, **X. Zhou, W. Li**, D. Hou, **C. Melhauser, E. Sinsky, M. Pena, B. Fu, H. Guan, W. Kolczynski, R. Wobus** and V. Tallapragada, 2018: Towards the Improvement of Sub-Seasonal Prediction in the NCEP Global Ensemble Forecast System (GEFS). *Journal of Geophysical Research*: *Atmospheres*. **123**, 6732-6745. https://doi.org/10.1029/2018JD028506

2017

Abdolali, A. and Kirby, J. T., 2017, Role of compressibility on tsunami propagation. *Journal of Geophysical Research: Oceans*, **122**. https://doi.org/10.1002/2017JC013054

Alves, J.-H. G. M., Campos, R., Soares, C. G., Parente, C. E, 2017: Improving Surface Wind Databases for Extreme Wind-Wave Simulation and Analysis in the South Atlantic Ocean. NCEP Office Note #491.

Badia, A., O. Jorba, A. Voulgarakis, D. Dabdub, C. P. García-Pando, A. Hilboll, M. Gonçalves, and **Z. Janjic**, 2017: Description and evaluation of the Multiscale Online Nonhydrostatic AtmospheRe CHemistry model (NMMB-MONARCH) version 1.0: gas-phase chemistry at global scale. *Geosci. Model Dev.*, **10**, 609–638, 2017. https://doi.org/10.5194/gmd-10-609-2017

Barbariol, F., **J.-H. GM Alves**, A. Benetazzo, F. Bergamasco, L. Bertotti, S. Carniel, L. Cavaleri, **Y. Y. Chao, A. Chawla**, A. Ricchi, M. Sclavo, and **H. Tolman**, 2017: Numerical modeling of space-time wave extremes using WAVEWATCH III. *Ocean Dynamics*, **67**, 535–549(2017). https://doi.org/10.1007/s10236-016-1025-0

Bernardet, L., L. Carson, and **V. Tallapragada**, 2017: The Design of a Modern Information Technology Infrastructure to Facilitate Research-to-Operations Transition for NCEP's Modeling Suites. *Bull. Amer. Meteor. Soc*, **98**, 899-904. https://doi.org/10.1175/BAMS-D-15-00139.1

Campos, R. M., **V. Krasnopolsky, J.-H. Alves**, and S. Penny, 2017: Improving NCEP's Probabilistic Wave Height Forecasts Using Neural Networks: A Pilot Study Using Buoy Data. NCEP Office Note #490.

Chen, T.-C., J.-D. Tsay, J. Matsumoto, and **J. Alpert**, 2017: Forecast Advisory for a Cold-Season Heavy Rainfall/Flood Event That Developed from Multiple Interactions of the Cold-Surge Vortex with Cold-Surge Flows in the South China Sea. *Wea. Forecasting*, **32**, 797-819. https://doi.org/10.1175/WAF-D-16-0148.1

Chen, T.-C., J.-D. Tsay, J. Matsumoto, and **J. Alpert**, 2017: Impact of the Summer Monsoon Westerlies on the South China Sea Tropical Cyclone Genesis in May. *Wea. Forecasting*, **32**, 925-947. https://doi.org/10.1175/WAF-D-16-0189.1

Dong, J., R. Domingues, G. Goni, G. Halliwell, **H.-S. Kim**, S. Lee, M. Mehari, F. Bringas, J. Morell, and L. Pomales, 2017: Impact of assimilating underwater glider data on Hurricane Gonzalo (2014) forecast. *Wea. Forecasting*, **32**, 1143-1159. https://doi.org/10.1175/WAF-D-16-0182.1

Du, J., and B. Zhou, 2017: Ensemble fog prediction, in the book "Marine fog: challenges and advancements in observations, modeling, and forecasting" (eds. by D. Koracin and C. E. Dorman). Springer, 477–509, doi: https://link.springer.com/chapter/10.1007/978-3-319-45229-6_10

Goni, G., R.E. Todd, S.R. Jayne, G. Halliwell, S. Glenn, **J. Dong**, R. Curry, R. Dominigues, F. Bringas, L. Centurioni, S. F. DiMarco, T. Miles, J. Morell, L. Pomales, **H.-S. Kim**, P.E. Robbins, G. G. Gawarkiewicz, J. Wilkin, J. Heiderich, B. Baltes, J.J. Cione, G. Seroka, K. Knee, and E.R. Sanabia, 2017: Autonomous and Lagrangian Ocean Observations for Atlantic Tropical Cyclone Studies and Forecasts. *Oceanography*, June 2017, 84-95. https://doi.org/10.5670/oceanog.2017.227

Guan, H. and **Yuejian Zhu**, 2017: Development of Verification Methodology for Extreme Weather Forecasts. *Wea. Forecasting*, **32**, 470-491. https://doi.org/10.1175/WAF-D-16-0123.1

Halliwell, G.R., M. Mehari, L.K. Shay, V.H. Kourafalou, H. Kang, **H.-S. Kim**, **J. Dong**, and R. Atlas, 2017: OSSE quantitative assessment of rapid-response prestorm ocean surveys to improve coupled tropical cyclone prediction. *J. Geophys. Res. Oceans*, **122**, https://doi.org/10.1002/2017JC012760

Hao, Z., X. Yuan, **Y. Xia**, F. Hao, and V. Singh, 2017: An overview of drought monitoring and prediction systems at regional and global scales. *Bull. Amer. Meteorol. Soc.*, **98 (9)**, 1879-1896. https://doi.org/10.1175/BAMS-D-15-00149.1

Han, J., **Wang, W.**, **Kwon, Y. C.**, Hong, S.-Y., **Tallapragada, V.**, and **Yang, F.**, 2017: Updates in the NCEP GFS cumulus convection schemes with scale and aerosol awareness. *Wea. Forecasting*, **32(5)**, 2005–2017. https://doi.org/10.1175/WAF-D-17-0046.1

Huang, J., **J. McQueen**, J. Wilczak, I. Djalalova, I. Stajner, **P. Shafran**, D. Allured, P. Lee, L. Pan, D. Tong, **H-C. Huang**, **G. DiMego**, S. Upadhayay, and L. D. Monache, 2017: Improving NOAA NAQFC $PM_{2.5}$ Predictions with a Bias Correction Approach. *Wea. Forecasting*, **32(2)**, 407-421. https://doi.org/10.1175/WAF-D-16-0118.1

Jiang, M., J. Feng, Z. Li, **R. Sun, Y.-T. Hou**, **Yuejian Zhu, S. Moorthi**, B. Wan, J. Gao, and M. Gribb, 2017: Potential influences of neglecting aerosol effects on the NCEP GFS

precipitation forecast. *Atmos. Chem. Phys.*, **17**, 13967–13982, 2017. https://doi.org/10.5194/acp-17-13967-2017

Juang, H.-M. Henry, 2017: The Deep-Atmosphere Euler Equations in a Non-Approximated Shallow-Atmosphere-Alike Form. NCEP Office Note #488.

Krasnopolsky, V., **S. Nadiga, A. Mehra**, E. Bayler, and H.-C. Kim, 2017: Optimization of a Neural Network-Based Biological Model for Chlorophyll-a Concentration in the Upper Ocean. NCEP Office Note #487

Kumar, S. V., Wang, S., Mocko, D. M., Peters-Lidard, C. D., & **Xia, Y.**, 2017: Similarity assessment of land surface model outputs in the North American Land Data Assimilation System. *Water Resources Research*, **53**, 8941–8965. https://doi.org/10.1002/2017WR020635

Lee, P., **J. McQueen**, I. Stajner, **J. Huang**, L. Pan, D. Tong, H. Kim, Y. Tang, S. Kondragunta, M. Ruminski, S. Lu, **E. Rogers**, R. Saylor, **P. Shafran, H.-C. Huang**, J. Gorline, S. Upadhayay, and R. Artz, 2017: NAQFC Developmental Forecast Guidance for Fine Particulate Matter (PM$_{2.5}$). *Wea. Forecasting*, **32**, 343-360. https://doi.org/10.1175/WAF-D-15-0163.1

Lim, T. K., M. Ignatius, M. Miguel, N. H. Wong, and **H.-M. Henry Juang**, 2017: Multi-scale urban system modeling for sustainable planning and design. *Energy and Buildings*, **157**, 78-91. https://doi.org/10.1016/j.enbuild.2017.02.024

Lu, X. X. Wang, **M. Tong**, and **V. Tallapragada**, 2017: GSI-Based, Continuously Cycled, Dual-Resolution Hybrid Ensemble–Variational Data Assimilation System for HWRF: System Description and Experiments with Edouard (2014). *Mon. Wea. Rev.*, **145**, 4877-4898. https://doi.org/10.1175/MWR-D-17-0068.1

Luo, Y., R. Zhang, Q. Wan, B. Wang, W. K. Wong, Z. Hu, B. J.-D. Jou, Y. Lin, R. H. Johnson, C.-P. Chang, **Yuejian Zhu**, X. Zhang, H. Wang, R. Xia, J. Ma, D.-L. Zhang, M. Gao, Y. Zhang, X. Liu, Y. Chen, H. Huang, X. Bao, Z. Ruan, Z. Cui, Z. Meng, J. Sun, M. Wu, H. Wang, X. Peng, W. Qian, K. Zhao, and Y. Xiao, 2017: The southern China monsoon rainfall experiment (SCMREX). *Bull. Amer. Meteor. Soc.*, **98(5)**, 999-1013. https://doi.org/10.1175/BAMS-D-15-00235.1

Ma, N., Niu, G. Y., **Xia, Y.**, Cai, X., Zhang, Y., Ma, Y., & Fang, Y., 2017: A systematic evaluation of Noah-MP in simulating land-atmosphere energy, water, and carbon exchanges over the continental United States. *Journal of Geophysical Research: Atmospheres*, **122**, 12,245–12,268. https://doi.org/10.1002/2017JD027597

Marti, A., A. Folch, O. Jorba, and **Z. Janjic**, 2017: Volcanic ash modeling with the online NMMB-MONARCH-ASH v1. 0 model: model description, case simulation, and evaluation. *Atmospheric Chemistry and Physics*, **17(6)**, 4005-4030.

https://acp.copernicus.org/preprints/acp-2016-881/acp-2016-881-manuscript-version4.pdf

Ninneman, J., S. Lu, P. Lee, **J. McQueen, J. Huang**, K. Demerjian, and J. Schwab, 2017: Observed and model-derived ozone production efficiency over urban and rural New York State. *Atmosphere*, 8, 15 pp. https://www.mdpi.com/2073-4433/8/7/126/pdf

Powers, J. G., J. B. Klemp, W. C. Skamarock, C. A. Davis, J. Dudhia, D. O. Gill, J. L. Coen, D. J. Gochis, R. Ahmadov, S. E. Peckham, G. A. Grell, J. Michalakes, **S. Trahan**, S. G. Benjamin, C. R. Alexander, **G. J. DiMego**, W. Wang, C. S. Schwartz, G. S. Romine, Z. Liu, C. Snyder, F. Chen, M. J. Barlage, W. Yu, and M. G. Duda, 2017: The Weather Research and Forecasting Model: Overview, System Efforts, and Future Directions. *Bull. Amer. Meteor. Soc.*, **98**, 1717-1737. https://doi.org/10.1175/BAMS-D-15-00308.1

Purser, R. J., and **M. Tong**, 2017: A Minor Modification of the Gnomonic Cubed-Sphere Grid that Offers Advantages in the Context of Implementing Moving Hurricane Nests. NCEP Office Note #486

Purser, R. J., 2017: Sets of Optimally Diversified Polyhedral Orientations. NCEP Office Note #489

Rančić, M., R. J. Purser, D. Jović, R. Vasic, and **T. Black**, 2017: A Nonhydrostatic Multiscale Model on the Uniform Jacobian Cubed Sphere. *Mon. Wea. Rev.*, **145**, 1083-1105. https://doi.org/10.1175/MWR-D-16-0178.1

Schmidt, G. A., D. Bader, L. J. Donner, G. S. Elsaesser, J.-C. Golaz, C. Hannay, A. Molod, R. B. Neale, and **S. Saha**, 2017: Practice and philosophy of climate model tuning across six US modeling centers. *Geoscientific Model Development*, **10(9)**, 3207-3223. https://gmd.copernicus.org/articles/10/3207/2017/gmd-10-3207-2017.pdf

Qian, W.H., J. Leung, W. M. Luo, **J. Du**, and J. Gao, 2017: An index of anomalous convective instability to detect tornadic and hail storms. *Metor. Atmo. Phy.* (MAP), **131**, 351–373 (2019). https://link.springer.com/article/10.1007/s00703-017-0576-z

Wang, D., Wang, G., Parr, D. T., Liao, W., **Xia, Y.**, and Fu, C, 2017: Incorporating remote sensing-based ET estimates into the Community Land Model version 4.5. *Hydrol. Earth Syst. Sci.*, **21,** 3557–3577. https://doi.org/10.5194/hess-21-3557-2017, 2017.

Wu, W.-S., D. F. Parrish, E. Rogers, and Y. Lin, 2017: Regional Ensemble–Variational Data Assimilation Using Global Ensemble Forecasts. *Wea. Forecasting*, **32**, 83-96. https://doi.org/10.1175/WAF-D-16-0045.1

Xia, Y., D. M. Mocko, M. Huang, B. Li, M. Rodell, K. E. Mitchell, X. Cai, and **M. B. Ek**, 2017: Comparison and Assessment of Three Advanced Land Surface Models in Simulating Terrestrial Water Storage Components over the United States. *J. Hydrometeor.*, **18(3)**, 625-649. https://doi.org/10.1175/JHM-D-16-0112.1

Zhang, J. A., R. F. Rogers, and **V. Tallapragada**, 2017: Impact of Parameterized Boundary Layer Structure on Tropical Cyclone Rapid Intensification Forecasts in HWRF. *Mon. Wea. Rev*, **145(4)**, 1413-1426. https://doi.org/10.1175/MWR-D-16-0129.1

Zheng, M., E. K. M. Chang, B. A. Colle, **Y. Lou** and **Yuejian Zhu**, 2017: Applying Fuzzy Clustering to a Multimodel Ensemble for U.S. East Coast Winter Storms: Scenario Identification and Forecast Verification. *Wea. Forecasting*, **32(3)**, 881-903. https://doi.org/10.1175/WAF-D-16-0112.1

Zheng, W., M. Ek, K. Mitchell, **H. Wei**, and **J. Meng**, 2017: Improving the Stable Surface Layer in the NCEP Global Forecast System. *Mon. Wea. Rev.*, **145**, 3969-3987. https://doi.org/10.1175/MWR-D-16-0438.1

Zhou, X., Yuejian Zhu, D. Hou, **Y. Luo, J. Peng** and **R. Wobus**, 2017: Performance of the New NCEP Global Ensemble Forecast System in a Parallel Experiment. *Wea. Forecasting*, **32**, 1989-2004. https://doi.org/10.1175/WAF-D-17-0023.1

Zhu, Yuejian, X. Zhou, M. Pena, W. Li, C. Melhauser and **D. Hou**, 2017: Impact of Sea Surface Temperature Forcing on Weeks 3 & 4 Forecast Skill in the NCEP Global Ensemble Forecasting System. *Wea. Forecasting*, **32**, 2159-2173. https://doi.org/10.1175/WAF-D-17-0093.1

2016

Badia, A., O. Jorba, A. Voulgarakis, D. Dabdub, C. Pérez, A. Hilboll, M. Gonçalves, and **Z. Janjic**, 2016: Gas-phase chemistry in the online multiscale NMMB/BSC Chemical Transport Model: Description and evaluation at global scale. *Geosci. Model Dev*, **9**, 47 pp. https://upcommons.upc.edu/bitstream/handle/2117/88524/Gas-phase%20chemistry%20in%20the%20online%20multiscale%20NMMB.pdf

Benjamin, S. G., S. S. Weygandt, J. M. Brown, M. Hu, C. R. Alexander, T. G. Smirnova, J. B. Olson, E. P. James, D. C. Dowell, G. A. Grell, H. Lin, S. E. Peckham, T. L. Smith, W. R. Moninger, J. S. Kenyon, and **G. S. Manikin**, 2016: A North American Hourly Assimilation and Model Forecast Cycle: The Rapid Refresh. *Mon. Wea. Rev.* **144**, 1669-1694. https://doi.org/10.1175/MWR-D-15-0242.1

Bernier, N. B., **J.-H. G. M. Alves, H. Tolman, A. Chawla**, S. Peel, B. Pouliot, J.-M. Bélanger, P. Pellerin, M. Lépine, and M. Roch, 2016: Operational Wave Prediction System at Environment Canada: Going Global to Improve Regional Forecast Skill. *Wea. Forecasting*, **31**, 353-360. https://doi.org/10.1175/WAF-D-15-0087.1

Boukabara, S.-A., I. Moradi, R. Atlas, S. P. F. Casey, L. Cucurull, R. N. Hoffman, K. Ide, V. Krishna Kumar, R. Li, Z. Li, M. Masutani, N. Shahroudi, **J. Woollen**, and Y. Zhou, 2016: Community Global Observing System Simulation Experiment (OSSE) Package (CGOP): Description and Usage. *J. Atmo. Ocean Tech.*, **33(8)**, 1759–1777. https://doi.org/10.1175/JTECH-D-16-0012.1

Boukabara, S. A., T. Zhu, **H. L. Tolman**, S. Lord, S. Goodman, R. Atlas, M. Goldberg, T. Auligne, B. Pierce, L. Cucurull, M. Zupanski, M. Zhang, I. Moradi, J. Otkin, D. Santek, B. Hoover, Z. Pu, X. Zhan, C. Hain, E. Kalnay, D. Hotta, S. Nolin, E. Bayler, **A. Mehra**, S. P. F. Casey, D. Lindsey, L. Grasso, V. K. Kumar, A. Powell, J. Xu, T. Greenwald, J. Zajic, J. Li, J. Li, **Bin Li**, J. Liu, L. Fang, P. Wang, and T.-C. Chen, 2016: S4: An O2R/R2O Infrastructure for Optimizing Satellite Data Utilization in NOAA Numerical Modeling Systems: A Step Toward Bridging the Gap between Research and Operations. *Bull. Amer. Meteor. Soc.*, **97**, 2358-2378. https://doi.org/10.1175/BAMS-D-14-00188.1

Cai, M., Y. Yu, Y. Deng, H. M. van den Dool, R. Ren, **S. Saha, X. Wu**, and J. Huang, 2016: Feeling the Pulse of the Stratosphere: An Emerging Opportunity for Predicting Continental-Scale Cold-Air Outbreaks 1 Month in Advance. *Bull. Amer. Meteor. Soc*, **97**, 1475-1489. https://doi.org/10.1175/BAMS-D-14-00287.1

Dirmeyer, P. A., J. Wu, H. E. Norton, W. A. Dorigo, S. M. Quiring, T. W. Ford, J. A. Santanello Jr., M. G. Bosilovich, **M. B. Ek**, R. D. Koster, G. Balsamo, and D. M. Lawrence, 2016: Confronting Weather and Climate Models with Observational Data from Soil Moisture Networks over the United States. *J. Hydrometeor.*, **17(4)**, 1049-1067. https://doi.org/10.1175/JHM-D-15-0196.1

Garraffo, Z. D., H.-C. Kim, A. Mehra, T. Spindler, I. Rivin, **and H. L. Tolman**, 2016: Modeling of ^{137}Cs as a Tracer in a Regional Model for the Western Pacific, after the Fukushima–Daiichi Nuclear Power Plant Accident of March 2011. *Wea. Forecasting*, **31**, 553-579. https://doi.org/10.1175/WAF-D-13-00101.1

Han, J.-Y., S.-Y. Hong, K.-S. Lim, and **J. Han**, 2016: Sensitivity of a Cumulus Parameterization Scheme to Precipitation Production Representation and Its Impact on a Heavy Rain Event over Korea. *Mon. Wea. Rev.*, **144**, 2125-2135. https://doi.org/10.1175/MWR-D-15-0255.1

Han, J., M. L. Witek, J. Teixeira, **R. Sun, H.-L. Pan**, J. K. Fletcher, and C. S. Bretherton, 2016: Implementation in the NCEP GFS of a Hybrid Eddy-Diffusivity Mass-Flux (EDMF) Boundary Layer Parameterization with Dissipative Heating and Modified Stable Boundary Layer Mixing. *Wea. Forecasting*, **31**, 341-352. https://doi.org/10.1175/WAF-D-15-0053.1

Haughton, N. G. Abramowitz, A. J. Pitman, D. Or, M. J. Best, H. R. Johnson, G. Balsamo, A. Boone, M. Cuntz, B. Decharme, P. A. Dirmeyer, **J. Dong, M. Ek**, Z. Guo, V. Haverd, B. J. J. van den Hurk, G. S. Nearing, B. Pak, J. A. Santanello Jr., L. E.

Stevens, and N. Vuichard, 2016: The Plumbing of Land Surface Models: Is Poor Performance a Result of Methodology or Data Quality*? J. Hydrometor.*, **17(6)**, 1705–1723. https://doi.org/10.1175/JHM-D-15-0171.1

Jiang, N., W. H. Qian, **J. Du**, R. H. Grumm, and J. L. Fu, 2016: A comprehensive approach from the raw and normalized anomalies to the analysis and prediction of the Beijing extreme rainfall on 21 July 2012. *Nat. Hazards*, **84**, 1551. doi:10.1007/s11069-016-2500-0.

Krasnopolsky, V., S. Nadiga, **A. Mehra**, E. Bayler and **D. Behringer**, 2016: Neural Networks Technique for Filling Gaps in Satellite Measurements: Application to Ocean Color Observations. *Computational Intelligence and Neuroscience*, vol. 2016, Article ID 6156513, 9 pages, 2016. https://doi.org/10.1155/2016/6156513

Kieu, C., **V. Tallapragada**, D.-L. Zhang, and Z. Moon, 2016: On the development of double warm-core structures in intense tropical cyclones. *J. Atmos. Sci.*, **73(11)**, 4487–4506. https://doi.org/10.1175/JAS-D-16-0015.1

Kumar, S. V., B. F. Zaitchik, C. D. Peters-Lidard, M. Rodell, R. Reichle, B. Li, M. Jasinski, D. Mocko, A. Getirana, G. De Lannoy, M. H. Cosh, C. R. Hain, M. Anderson, K. R. Arsenault, **Y. Xia**, and **M. Ek**, 2016: Assimilation of Gridded GRACE Terrestrial Water Storage Estimates in the North American Land Data Assimilation System. *J. Hydrometeor.*, **17(7)**, 1951-1972. https://doi.org/10.1175/JHM-D-15-0157.1

Liu, P., Q. Zhang, C. Zhang, **Yuejian Zhu**, M. Khairoutdinov, H.-M. Kim, C. Schumacher, and M. Zhang, 2016: A Revised Real-Time Multivariate MJO Index. *Mon. Wea. Rev.*, **144**, 627-642. https://doi.org/10.1175/MWR-D-15-0237.1

Liu, S., G. DiMego, S. Guan, V. Krishna Kumar, **D. Keyser**, Q. Xu, K. Nai, P. Zhang, L. Liu, J. Zhang, K. Howard, and J. Ator, 2016: WSR-88D Radar Data Processing at NCEP. *Wea. Forecasting*, **31**, 2047-2055. https://doi.org/10.1175/WAF-D-16-0003.1

Lu, C.-H., A. da Silva, **J. Wang**, S. Moorthi, M. Chin, P. Colarco, Y. Tang, **P. S. Bhattacharjee**, S.-P. Chen, **H.-Y. Chuang, H.-M. Henry Juang, J. McQueen**, and **M. Iredell**, 2016: The implementation of NEMS GFS Aerosol Component (NGAC) Version 1.0 for global dust forecasting at NOAA/NCEP. *Geoscientific Model Development*, 9(5), 1905-1919. https://gmd.copernicus.org/articles/9/1905/2016/gmd-9-1905-2016.pdf

Mao, M., **A. J. Van Der Westhuysen**, M. Xia, D. J. Schwab, and **A. Chawla**, 2016: Modeling wind waves from deep to shallow waters in Lake Michigan using unstructured SWAN. Journal of Geophysical Research: Oceans, 121(6), 3836-3865. https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1002/2015JC011340

Nearing, G. S, D. M. Mocko, C. D. Peters-Lidard, S. V. Kumar, and **Y. Xia**, 2016: Benchmarking NLDAS-2 Soil Moisture and Evapotranspiration to Separate Uncertainty

Contributions. *J. Hydrometeor.*, **17(3)**, 745-759. https://doi.org/10.1175/JHM-D-15-0063.1

Prakash, S., I. M. Momin, A. K. Mitra, **P. S. Bhattacharjee, F. Yang**, and **V. Tallapragada**, 2016: An early assessment of medium range monsoon precipitation forecasts from the latest high-resolution NCEP-GFS (T1534) model over South Asia. *Pure and Applied Geophysics*, **173**, 2215–2225 (2016). https://link.springer.com/article/10.1007/s00024-016-1248-5

Pu, Z., S. Zhang, **M. Tong**, and **V. Tallapragada**, 2016: Influence of the self-consistent regional ensemble background error covariance on hurricane inner-core data assimilation with the GSI-based hybrid system for HWRF. *J. Atmos. Sci.*, **73(12)**, 4911-4925. https://doi.org/10.1175/JAS-D-16-0017.1

Purser, R. J., and **Yanqiu Zhu**, 2016: Comparison of Finite Differencing, Time Smoothing and Spline Fitting Algorithms for Estimating Airspeed Metadata from Coarse-Resolution Aircraft Position and Wind Reports. NCEP Office Note #485

Qian, W.H., N. Jiang and **J. Du**, 2016: Mathematical and physical representation of the moist vorticity and moist divergence as well as their application to precipitation: Reply to comments. *Wea. and Forecasting*, **31**, 1397-1405. https://doi.org/10.1175/WAF-D-16-0111.1

Qian, W.H., J. Huang, and **J. Du**, 2016: Examination of Hurricane Sandy (2012): Structure and Intensity Evolution from Full-field and Anomaly-field Analyses. *Tellus A*, **68:1**, 29029, https://doi.org/10.3402/tellusa.v68.29029

Qian, W. H., N. Jiang, and **J. Du**, 2016: Anomaly based weather analysis versus traditional total-field based weather analysis for depicting regional heavy rain events. *Wea. and Forecasting*, **31**, 71-93. https://doi.org/10.1175/WAF-D-15-0074.1

Qian, W. H., T. Yu, and **J. Du**, 2016: A unified approach to trace surface heat and cold events by using height anomaly. *Climate Dynamics*, **46(5-6):** 1647-1664.

Reid, M. J. Gunn, S. Shah, M. Donovan, R. Eggo, S. Babin, I. Stajner, **E. Rogers**, K. B. Ensor, L. Raun, J. I. Levy, I. Painter, W. Phipatanakul, F. Yip, A. Nath, L. Streichert, C. Tong and H. Burkom, 2016: Cross-Disciplinary Consultancy to Enhance Predictions of Asthma Exacerbation Risk in Boston. *Online Journal of Public Health Informatics*, **8**, 29 pp. https://doi.org/10.5210/ojphi.v8i3.6902

Shao, H., **J. Derber**, X.-Y. Huang, M. Hu, K. Newman, D. Stark, **M. Lueken**, C. Zhou, L. Nance, Y.-H. Kuo, and B. Brown, 2016: Bridging Research to Operations Transitions: Status and Plans of Community GSI. *Bull. Amer. Meteor. Soc.*, **97**, 1427-1440. https://doi.org/10.1175/BAMS-D-13-00245.1

Tallapragada, V., 2016: Overview of the NOAA/NCEP Operational Hurricane Weather Research and Forecast (HWRF) Modelling System. In: Mohanty U.C., Gopalakrishnan S.G. (eds) Advanced Numerical Modeling and Data Assimilation Techniques for Tropical Cyclone Prediction, pages 51-106. Springer, Dordrecht. https://doi.org/10.5822/978-94-024-0896-6_3

Tallapragada, V., C. Kieu, **S. Trahan, Q. Liu, W. Wang, Z. Zhang, M. Tong**, B. Zhang, **L. Zhu**, and B. Strahl, 2016: Forecasting Tropical Cyclones in the Western North Pacific Basin Using the NCEP Operational HWRF Model: Model Upgrades and Evaluation of Real-Time Performance in 2013. *Wea. Forecasting*, **31**, 877-894. https://doi.org/10.1175/WAF-D-14-00139.1

Theurich, G., C. DeLuca, T. Campbell, F. Liu, K. Saint, M. Vertenstein, J. Chen, R. Oehmke, J. Doyle, T. Whitcomb, A. Wallcraft, **M. Iredell, T. Black**, A. M. Da Silva, T. Clune, R. Ferraro, P. Li, M. Kelley, I. Aleinov, V. Balaji, N. Zadeh, R. Jacob, B. Kirtman, F. Giraldo, D. McCarren, S. Sandgathe, S. Peckham, and R. Dunlap IV, 2016: The Earth System Prediction Suite: Toward a Coordinated U.S. Modeling Capability. *Bull. Amer. Meteor. Soc.*, **96**, 1229-1247. https://doi.org/10.1175/BAMS-D-14-00164.1

Wolff, J. K., M. Harrold, T. Hertneky, **E. Aligo, J. R. Carley, B. Ferrier**, **G. DiMego**, L. Nance, and Y.-H. Kuo, 2016: Mesoscale Model Evaluation Testbed (MMET): A Resource for Transitioning NWP Innovations from Research to Operations (R2O). *Bull. Amer. Meteor. Soc*, **97**, 2135-2147. https://doi.org/10.1175/BAMS-D-15-00001.1

Xia, Y., B. A. Cosgrove, K. E. Mitchell, C. D. Peters-Lidard, **M. B. Ek**, S. Kumar, D. Mocko, and **H. Wei**, 2016: Basin-scale assessment of the land surface energy budget in the National Centers for Environmental Prediction operational and research NLDAS-2 systems. *J. Geophys. Res. Atmos.*, **121(1),** 196-220. https://doi.org/10.1002/2015JD023889

Xia, Y., B. A. Cosgrove, K. E. Mitchell, C. D. Peters-Lidard, **M. B. Ek**, M. Brewer, D. Mocko, S. V. Kumar, **H. Wei, J. Meng**, L. Luo, 2016: Basin-scale assessment of the land surface water budget in the National Centers for Environmental Prediction operational and research NLDAS-2 systems. *J. Geophys. Res. Atmos.*, **121(6)**, 2750-2779. https://doi.org/10.1002/2015JD023733

Zhang, B., **V. Tallapragada**, F. Weng, J. Sippel, and Z. Ma, 2016: Estimation and correction of model bias in the NASA/GMAO GEOS5 data assimilation system: Sequential implementation. *Advances in Atmospheric Sciences*, 33, 659–672 (2016). https://link.springer.com/article/10.1007/s00376-015-5155-y

Zhang, X, S. G. Gopalakrishnan, **S. Trahan**, T. S. Quirino, **Q. Liu, Z. Zhang**, G. Alaka, and **V. Tallapragada**, 2016: Representing Multiple Scales in the Hurricane Weather Research and Forecasting Modeling System: Design of Multiple Sets of Movable Multilevel Nesting and the Basin-Scale HWRF Forecast Application. *Wea. Forecasting*, **31**, 2019-2034. https://doi.org/10.1175/WAF-D-16-0087.1

Zhou, X., Yuejian Zhu, D. Hou, and D. Kleist**,** 2016: Comparison of the Ensemble Transform and the Ensemble Kalman Filter in the NCEP Global Ensemble Forecast System. *Wea. Forecasting*, **31** (6), 2058-2074. https://doi.org/10.1175/WAF-D-16-0109.1

Zhu, Yanqiu, E. Liu, R. Mahajan, C. Thomas, D. Groff, P. Van Delst, A. Collard, D. Kleist**, R. Treadon**, and **J. C. Derber**, 2016: All-Sky Microwave Radiance Assimilation in NCEP's GSI Analysis System. *Mon. Wea. Rev.*, **144**, 4709-4735. https://doi.org/10.1175/MWR-D-15-0445.1

2015

Alves, J.-H. G.M., S. Stripling, **A. Chawla, H. Tolman**, and **A. van der Westhuysen**, 2015: Operational Wave Guidance at the U.S. National Weather Service during Tropical/Post–Tropical Storm Sandy, October 2012. *Mon. Wea. Rev.*, **143**, 1687-1702. https://doi.org/10.1175/MWR-D-14-00143.1

Atlas, R., **V. Tallapragada**, and S. Gopalakrishnan, 2015: Advances in tropical cyclone intensity forecasts. *Marine Technology Society Journal*, **49**, 149-160. https://repository.library.noaa.gov/view/noaa/15129/noaa_15129_DS1.pdf

Bernardet, L., **V. Tallapragada**, S. Bao, **S. Trahan**, **Y. Kwon**, **Q. Liu**, **M. Tong**, M. Biswas, T. Brown, D. Stark, L. Carson, R. Yablonsky, E. Uhlhorn, S. Gopalakrishnan, X. Zhang, T. Marchok, B. Kuo, and R. Gall, 2015: Community Support and Transition of Research to Operations for the Hurricane Weather Research and Forecasting Model. *Bull. Amer. Meteor. Soc*, **96**, 953-960. https://doi.org/10.1175/BAMS-D-13-00093.1

Best, M. J., G. Abramowitz, H. R. Johnson, A. J. Pitman, G. Balsamo, A. Boone, M. Cuntz, B. Decharme, P. A. Dirmeyer, **J. Dong, M. Ek**, Z. Guo, V. Haverd, B. J. J. van den Hurk, G. S. Nearing, B. Pak, C. Peters-Lidard, J. A. Santanello Jr., L. Stevens, and N. Vuichard, 2015: The Plumbing of Land Surface Models: Benchmarking Model Performance. *J. Hydrometeor.*, **16(3)**, 1425–1442. https://doi.org/10.1175/JHM-D-14-0158.1

Brennan, M. J., **D. T. Kleist, K. Howard**, and S. J. Majumdar, 2015: The Impact of Supplemental Dropwindsonde Data on the Structure and Intensity of Tropical Storm Karen (2013) in the NCEP Global Forecast System. Wea. Forecasting, 30(3), 683–691. https://doi.org/10.1175/WAF-D-15-0002.1

Chen, T.-C., J.-D. Tsay, J. Matsumoto, **J. Alpert**, 2015: Development and formation mechanism of the Southeast Asian winter heavy rainfall events around the South China Sea. Part I: Formation and propagation of cold surge vortex. *J. Climate*, **28(4)**, 1417–1443. https://doi.org/10.1175/JCLI-D-14-00170.1

Cleary, P. A., N. Fuhrman, L. Schulz, J. Schafer, J. Fillingham, H. Bootsma, **J. McQueen, Y. Tang**, T. Langel, S. McKeen, E. J. Williams, and S. S. Brown, 2015:

Ozone distributions over southern Lake Michigan: comparisons between ferry-based observations, shoreline-based DOAS observations and model forecasts. *Atmos. Chem. Phys.*, **15**, 5109–5122, 2015. https://acp.copernicus.org/articles/15/5109/2015/acp-15-5109-2015.pdf

Das, A. K., Y. V. Rama Rao, **V. Tallapragada, Z. Zhang**, S.K. Roy Bhowmik, and A. Sharma, 2015: Evaluation of the Hurricane Weather Research and Forecasting (HWRF) model for tropical cyclone forecasts over the North Indian Ocean (NIO). *Nat Hazards* **75,** 1205–1221 (2015). https://doi.org/10.1007/s11069-014-1362-6

Domingues, R., G. Goni, F. Bringas, S.-K. Lee, **H.-S. Kim**, G. Halliwell, **J. Dong**, J. Morell, and L. Pomales, 2015: Upper ocean response to Hurricane Gonzalo (2014): Salinity effects revealed by targeted and sustained underwater glider observations. Geophysical Research Letters, 42(17), 7131-7138. https://doi.org/10.1002/2015GL065378

Goldenberg, S. B., S. G. Gopalakrishnan, **V. Tallapragada**, T. Quirino, F. Marks, Jr., **S. Trahan**, X. Zhang, and R. Atlas, 2015: The 2012 Triply Nested, High-Resolution Operational Version of the Hurricane Weather Research and Forecasting Model (HWRF): Track and Intensity Forecast Verifications. *Wea. Forecasting*, **30**, 710-729. https://doi.org/10.1175/WAF-D-14-00098.1

Guan, H, B. Cui, and **Yuejian Zhu**, 2015: Improvement of Statistical Postprocessing Using GEFS Reforecast Information. *Wea. Forecasting*, **30**, 841-854. https://doi.org/10.1175/WAF-D-14-00126.1

Huang, J., **J. Du**, W. Qian, 2015: A Comparison between a Generalized Beta–Advection Model and a Classical Beta–Advection Model in Predicting and Understanding Unusual Typhoon Tracks in Eastern China Seas. *Wea. Forecasting*, **30**, 771-792. https://doi.org/10.1175/WAF-D-14-00073.1

Huang, M., **D. Tong**, P. Lee, L. Pan, **Y. Tang**, I. Stajner, R. B. Pierce, **J. McQueen**, J. Wang, 2015: Toward enhanced capability for detecting and predicting dust events in the western United States: the Arizona case study. *Atmospheric Chemistry and Physics*, **15(21)**, 12595-12610. https://acp.copernicus.org/articles/15/12595/2015/acp-15-12595-2015.pdf

Johnson, A., X. Wang, **J. R. Carley**, L. J. Wicker, and C. Karstens, 2015: A comparison of multiscale GSI-based EnKF and 3DVar data assimilation using radar and conventional observations for midlatitude convective-scale precipitation forecasts. *Mon. Wea. Rev.*, **143(8)**, 3087-3018. https://doi.org/10.1175/MWR-D-14-00345.1

Kumar, A., M. Chen, Y. Xue, and **D. Behringer**, 2015: An Analysis of the Temporal Evolution of ENSO Prediction Skill in the Context of the Equatorial Pacific Ocean Observing System. *Mon. Wea. Rev.*, **143**, 3204-3213. https://doi.org/10.1175/MWR-D-15-0035.1

Liu, L., C. Lozano, and **D. Iredell**, 2015: Time–Space SST Variability in the Atlantic during 2013: Seasonal Cycle. *J. Atmos. Ocean. Tech.*, **32(9)**, 1689–1705. https://doi.org/10.1175/JTECH-D-15-0028.1

Ma, Z., L. P. Riishøjgaard, M. Masutani, **J. S. Woollen**, and G. D. Emmitt, 2015: Impact of Different Satellite Wind Lidar Telescope Configurations on NCEP GFS Forecast Skill in Observing System Simulation Experiments. *J. Atmos. Ocean. Tech*, **32(3)**, 478–495. https://doi.org/10.1175/JTECH-D-14-00057.1

Mohanty, U. C., K. K. Osuri, **V. Tallapragada**, F. D. Marks, S. Pattanayak, M. Mohapatra, L. S. Rathore, S. G. Gopalakrishnan, and D. Niyogi, 2015: A Great Escape from the Bay of Bengal "Super Sapphire–Phailin" Tropical Cyclone: A Case of Improved Weather Forecast and Societal Response for Disaster Mitigation. *Earth Interactions*, **19(17)**, 1-11. https://doi.org/10.1175/EI-D-14-0032.1

Müller, M. D., and **Z. Janjic**, 2015: Verification of the New Nonhydrostatic Multiscale Model on the B Grid (NMMB): A View on Global Predictability of Surface Parameters. *Wea. Forecasting*, **30**, 827-840. https://doi.org/10.1175/WAF-D-14-00049.1

Nadiga, S., V. Krasnopolsky, E. Bayler, **H.-C. Kim, A. Mehra,** and **D. Behringer**, 2015: Neural Network Technique for Gap-Filling Satellite Ocean Color Observations. NCEP Office Note #483.

Purser, R. J., 2015: A Theoretical Examination of the Construction and Characterization of Super-Observations Obtained by Optimality Principles Guided by Information Theory. NCEP Office Note #481

Purser, R. J., 2015: Robustness of Implicit Rung-Kutta Schemes with Respect to Errors in the Specification of the System's Complex Frequencies. NCEP Office Note #482.

Qian, W. H., **J. Du**, X. Shan and N. Jiang, 2015: Incorporating the effects of moisture into a dynamical parameter: moist vorticity and moist divergence. *Wea. and Forecasting*, **30**, 1411-1428. https://doi.org/10.1175/WAF-D-14-00154.1

Sessions, W. R., J. S. Reid, A. Benedetti, P. R. Colarco, A. da Silva, **S. Lu**, T. Sekiyama, T.-Y. Tanaka, J.M. Baldasano, S. Basart, M. E. Brooks, T. F. Eck, **M. Iredell**, J. A. Hansen, O. C. Jorba, **H.-M. Henry Juang**, P. Lynch, J.-J. Morcrette, **S. Moorthi**, J. Mulcahy, Y. Pradhan, M. Razinger, C.B. Sampson, **J. Wang**, and D. L. Westphal, 2015: Development towards a global operational aerosol consensus: basic climatological characteristics of the International Cooperative for Aerosol Prediction Multi-Model Ensemble (ICAP-MME). *Atmos. Chem. Phys.*, **15**, 335–362, 2015. https://acp.copernicus.org/articles/15/335/2015/acp-15-335-2015.pdf

Sun, Y., Fu, R., Dickinson, R., Joiner, J., Frankenberg, C., Gu, L., **Xia, Y.**, and Fernando, N., 2015: Drought onset mechanisms revealed by satellite solar-induced

chlorophyll fluorescence: Insights from two contrasting extreme events, *J. Geophys. Res. Biogeosci.*, 120, 2427– 2440. https://doi.org/10.1002/2015JG003150

Tallapragada, V., **C. Kieu**, **S. Trahan, Z. Zhang**, **Q. Liu, W. Wang, M. Tong**, **B. Zhang**, and B. Strahl, 2015: Forecasting Tropical Cyclones in the Western North Pacific Basin Using the NCEP Operational HWRF: Real-Time Implementation in 2012. *Wea. Forecasting*, **30**, 1355-1373. https://doi.org/10.1175/WAF-D-14-00138.1

Xia, Y., **M. B. Ek, Y. Wu**, T. Ford, and S. M. Quiring, 2015: Comparison of NLDAS-2 Simulated and NASMD Observed Daily Soil Moisture. Part I: Comparison and Analysis. *J. Hydrometeor.*, **16(5)**, 1962-1980. https://doi.org/10.1175/JHM-D-14-0096.1

Xia, Y., **M. B. Ek, Y. Wu**, T. Ford, and S. M. Quiring, 2015: Comparison of NLDAS-2 Simulated and NASMD Observed Daily Soil Moisture. Part II: Impact of Soil Texture Classification and Vegetation Type Mismatches, *J. Hydrometeor.*, **16(5)**, 1981-2000. https://doi.org/10.1175/JHM-D-14-0097.1

Xia, Y., T. W. Ford, **Y. Wu**, S. M. Quiring, and **M. B. Ek**, 2015: Automated quality control of in Situ Soil Moisture from the North American Soil Moisture Database (NASMD) Using NLDAS-2 Products. *J. Appl. Meteor. Climatol.*, **54**, 1267–1282. https://doi.org/10.1175/JAMC-D-14-0275.1

Xia, Y., Peter-Lidard, C. D., Huang, M., **Wei, H.**, and **Ek, M**., 2015: Improved NLDAS-2 Noah-simulated hydrometeorological products with an interim run, *Hydrol. Process.*, **29**, 780– 792. https://doi.org/10.1002/hyp.10190

Xia, Y., Hobbins, M. T., Mu, Q. and **Ek, M.,** 2015: Evaluation of NLDAS-2 evapotranspiration against tower flux site observations. *Hydrol. Process.*, **29,** 1757– 1771. https://doi.org/10.1002/hyp.10299

Yablonsky, R. M., I. Ginis, B. Thomas, **V. Tallapragada, D. Sheinin**, L. Bernardet, 2015: Description and analysis of the ocean component of NOAA's operational Hurricane Weather Research and Forecasting Model (HWRF). *J. Atmos. Ocean. Tech.*, **32(1)**, 144–163. https://doi.org/10.1175/JTECH-D-14-00063.1

Yang, R., M. Ek, and J. Meng, 2015: Surface Water and Energy Budgets for the Mississippi River Basin in Three NCEP Reanalyses. *J. Hydrometeor.*, **16(2)**, 857-873. https://doi.org/10.1175/JHM-D-14-0056.1

Zhang, B., **Tallapragada, V.**, Weng, F. Sipple, J. and Ma, Z., 2015: Use of incremental analysis updates in 4D-Var data assimilation. *Adv. Atmos. Sci.*, **32**, 1575–1582 (2015). https://doi.org/10.1007/s00376-015-5041-7

Zhang, D.-L., L. Zhu, X. Zhang, and **V. Tallapragada**, 2015: Sensitivity of Idealized Hurricane Intensity and Structures under Varying Background Flows and Initial Vortex

Intensities to Different Vertical Resolutions in HWRF. *Mon. Wea. Rev.*, **143**, 914-932. https://doi.org/10.1175/MWR-D-14-00102.1

Zhang, J. A., D. S. Nolan, R. F. Rogers, **V. Tallapragada**, 2015: Evaluating the impact of improvements in the boundary layer parameterization on hurricane intensity and structure forecasts in HWRF. *Mon. Wea. Rev.*, **143(8)**, 3136–3155, https://doi.org/10.1175/MWR-D-14-00339.1

Zhu, P, Z. Zhu, S. Gopalakrishnan, R. Black, F. D. Marks, **V. Tallapragada**, J. A. Zhang, X. Zhang, and Cen Gao, 2015: Impact of subgrid-scale processes on eyewall replacement cycle of tropical cyclones in HWRF system. *Geophysical Research Letters*, **42(22),** 10,027-10,036. https://doi.org/10.1002/2015GL066436

Zhu, Yanqiu, **J. C. Derber**, **R. J. Purser, B. A. Ballish**, and **J. Whiting**, 2015: Variational Correction of Aircraft Temperature Bias in the NCEP's GSI Analysis System. *Mon. Wea. Rev.*, **143**, 3774-3803. https://doi.org/10.1175/MWR-D-14-00235.1

Zhu, Yuejian, and **Y. Luo**, 2015: Precipitation Calibration Based on the Frequency-Matching Method. *Wea. and Forecasting*, **30**, 1109-1124. https://doi.org/10.1175/WAF-D-13-00049.1

Zou, X., F. Weng, **V. Tallapragada**, L. Lin, B. Zhang, C. Wu, and Z. Qin, 2015: Satellite data assimilation of upper-level sounding channels in HWRF with two different model tops. *J. Meteorol. Res.*, **29**, 1–27 (2015). https://doi.org/10.1007/s13351-015-4108-9