2015 Tropical Cyclone Research Forum

69th Interdepartmental Hurricane Conference

Tropical Cyclone Operations and Research: Setting our Future Course

AGENDA

DAY 1 - Monday, March 2, 2015

12:00 PM Early Registration (12:00-5:00 PM)

1:00 PM-	Working Group for Hurricane and Winter Storms	Dr. Edward Rappaport (NCEP/NHC)
5:00 PM	Operations and Research (WG/HWSOR) Meeting	Chairperson, WG/HWSOR

DAY 2 - Tuesday, March 3, 2015

8:00 AM Registration (8:00 AM-12:00 PM)

Opening Session

8:15 AM	Forum Opening • Welcome • Setting the Stage	Mr. David McCarren Federal Coordinator for Meteorological Services and Supporting Research (Acting)
8:45 AM	Perspectives from the Florida Division of Emergency Management • Ms. Amy Godsey, Chief State Meteorologist, Florida Division of Emergency Management • Mr. Steven C. Woodard, Director, Emergency Preparedness Division, Jacksonville Fire and Rescue Department	

Morning Session Coordinator: Michael Bonadonna (OFCM)

Session 1: The 2014 Tropical Cyclone Season in Review

Session Leader			
	Kathy Winters (Air Force/45 th Weather Squadron)		
9:15 AM	Review of the 2014 Central Pacific Tropical Cyclone	Thomas Birchard (NOAA/NWS/CPHC)	
(S1-01)	Season and Preliminary Verification		
9:30 AM	A Review of the 2014 Joint Typhoon Warning Center	Robert J. Falvey (JTWC)	
(S1-02)	Tropical Cyclone Season		
9:45 AM	NOAA Aircraft Operations Center (AOC)	CAPT Harris Halverson, Jim McFadden, Devin R.	
(S1-03)	2014 Seasonal Summary and Future Plans	Brakobb, and Timothy Gallagher (NOAA/AOC)	
10:00 AM	53d Weather Reconnaissance Squadron/AFRC 2014	Lt Col Jonathan Talbot and 1st Lt Leesa Froelich	
(S1-04)	Hurricane Season Summary	(53 WRS)	
10:15 AM	2014 AXBT Demonstration Project: Operations Summary	Elizabeth R. Sanabia (U.S. Naval Academy) and	
(S1-05)	and Research Update	Peter G. Black (NRL/Monterey/SAIC)	
	-		

10:30 AM Morning Break (10:30-11:00 AM)

Session 2: Research Priorities of the Operational Centers (11:00 AM-12:30 PM)

	Session Leader Eric W. Uhlhorn (NOAA/AOML/HRD)		
11:00 AM (S2-01)	AF Weather Update to the 2015 IHC	Col Rob Swanson (Air Force Weather)	
11:15 AM (S2-02)	Objective, Automatic Tracking of Pre-Genesis Tropical Disturbances within the Deviation Angle Variance Method for Genesis Prediction	Elizabeth A. Ritchie, Oscar G. Rodríguez-Herrera, Kimberly M. Wood, and J. Scott Tyo (University of Arizona)	

11:30 AM	Deterministic Tropical Cyclone Genesis in Operational	Mike Fiorino (NOAA Earth System Research Lab)
(S2-03)	Global Numerical Weather Prediction Models as a Model	
	Assessment Tool	
11:45 AM	Towards Developing a Guidance Product for Tropical	Jonathan Zawislak (Florida International University),
(S2-04)	Cyclogenesis Probabilities Using a Comprehensive	Brandon Kerns (Univ. of Miami/RSMAS), and Haiyan
	Historical Dataset of Precipitation and Environmental	Jiang (FIU)
	Properties	
12:00 PM	Measuring Gaps in Tropical Cyclone Rainbands Using	Corene J. Matyas (University of Florida)
(S2-05)	Level II Radar Reflectivity Data	
12:15 PM	Evolution of the USGS Storm Tide Network	Jeanne C. Robbins (USGS-Raleigh, NC), John W.
(S2-06)		Fulton (USGS-Denver, CO), Ronald Busciolano
		(USGS-Coram, NY), and Robert R. Mason, Jr. (USGS-
		Reston, VA)

12:30 PM Lunch on your own (12:30-1:30 PM)

Afternoon Session Coordinator: Daniel Melendez (NWS/OST)

Session 3a: Transitioning Research to Operations (JHT and DTC), Part 1 (1:30-3:00 PM)

Session Leaders			
	Chris Landsea (NOAA/NCEP/NMC) and Shirley Murillo (NOAA/AOML/HRD)		
1:30 PM (S3a-01)	The Joint Hurricane Testbed (JHT): A 2015 Update	Chris Landsea (NOAA/NHC) and Shirley Murillo (NOAA/AOML)	
1:45 PM (S3a-02)	Guidance on Intensity Guidance	Kieran T. Bhatiaa and David S. Nolan (Univ. of Miami/RSMAS) and Andrea Schumacher (CIRA/CSU)	
2:00 PM (S3a-03)	Upgrades to the Operational Monte Carlo Wind Speed Probability Program Principle: Joint Hurricane Testbed Year 2 Project Update	Andrea Schumacher (CIRA/CSU)	
2:15 PM (S3a-04)	Developing a Tropical Cyclone Genesis Forecast Tool: Preliminary Results from 2014 Quasi-Operational Testing	Daniel Halperin, Robert Hart, and Henry Fuelberg (Florida St. Univ.) and Joshua Cossuth (NRL)	
2:30 PM (S3a-05)	The ARCHER Automated TC Center-Fixing Algorithm: Updates on Real-Time Operations, Accuracy, and Capabilities	Anthony (Tony) Wimmers and Christopher Velden (Univ. of Wisconsin/CIMSS)	
2:45 PM (S3a-06)	StormSurgeViz: A Visualization and Analysis Application for Coastal Storm Surge, Inundation, and Wave Modeling	Brian Blanton (Renaissance Computing Institute) and Rick Luettich (Univ. of North Carolina at Chapel Hill)	
3:00 PM (S3a-07)	Improvement to the Satellite-based 37 GHz Ring Rapid Intensification Index: A Year 2 Update	Haiyan Jiang, Yongxian Pei, Margie Kieper, and Joseph Zagrodnik (Florida International Univ.)	

3:15 PM Afternoon Break (3:15-3:45 PM)

Session 3b: Transitioning Research to Operations (JHT and DTC), Part 2 (3:45-4:45 PM)

	Session Leaders Chris Landsea (NOAA/NCEP/NMC) and Shirley Murillo (NOAA/AOML/HRD)		
3:45 PM (S3b-01)	Upgrades to the GFDL/GFDN Operational Hurricane Models Planned for 2015 (A JHT-Funded Project)	Morris A. Bender, Matthew Morin, and Timothy P. Marchok (NOAA/GFDL); Isaac Ginis and Biju Thomas (University of Rhode Island); and Robert E. Tuleya (Old Dominion University)	
4:00 PM (S3b-02)	Improving the Ocean Component of the Operational HWRF and GFDN/GFDN Hurricane Models	Isaac Ginis and Biju Thomas (University of Rhode Island), Morris Bender (NOAA/GFDL), Vijay Tallapragada (NOAA/NCEP/EMC)	
4:15 PM (S3b-03)	Demonstration Testbed for the Evaluation of Experimental Models for Tropical Cyclone Forecasting in Support of the NOAA Hurricane Forecast Improvement Project (HFIP)	Paul A. Kucera, Christopher L. Williams, Barbara G. Brown, and Louisa Nance (NCAR/Research Applications Laboratory)	

4:30 PM (S3b-04)	 Christina R. Holt (NOAA/GSD, CIRES/CU, and DTC), Greg Thompson (NCAR), Ligia Bernardet (NOAA/GSD, CIRES/CU, and DTC), Mrinal Biswas (NCAR), and Craig Hartsough (NOAA/GSD, CIRES/CU, and DTC)

4:45 PM 1-Minute Poster Previews coordinated by *Elizabeth A. Ritchie* (Univ. of Arizona) (following the poster previews, will transition immediately to the poster session)

5:30 PM Poster Session/Ice Breaker (cash bar and hors d'oeuvres) (5:30-7:30 PM)

DAY 3 - Wednesday, March 4, 2015

8:10 AM Opening/Administrative Remarks: Michael Bonadonna (OFCM)

Morning Session Coordinator: Michael Bonadonna (OFCM)

Session 4a: Observations and Observing Strategies, Part 1 (8:15-9:45 AM)

Session Leaders			
	Scott A. Braun (NASA/GSFC) and Chris Velden (Univ. of Wisconsin/CIMSS)		
8:15 AM	NOAA's Intensity Forecast Experiment (IFEX): Progress	Robert Rogers (NOAA/AOML/HRD)	
(S4a-01)	and Plans for 2015		
8:30 AM	Hurricane and Severe Storm Sentinel (HS3): Results from	Scott A. Braun and Paul A. Newman	
(S4a-02)	the 2014 Deployment	(NASA/GSFC)	
8:45 AM	Improved SFMR Surface Winds and Rain Rates	Eric W. Uhlhorn (NOAA/AOML/HRD) and	
(S4a-03)		Bradley W. Klotz (UM/RSMAS/CIMAS and HRD)	
9:00 AM	HIWRAP Global Hawk Status and Future Plans	Gerald Heymsfield and M. Mclinden	
(S4a-04)		(NASA/GSFC), S. Guimond (U. Md ESSIC), and	
		A. Didlake (ORAU)	
9:15 AM	Hurricane Imaging Radiometer (HIRAD)	Daniel J. Cecil (NASA/MSFC), Sayak K. Biswas	
(S4a-05)		(USRA), and W. Linwood Jones (Univ. of Central	
		Florida)	
9:30 AM	The Unique Capability of the Scatterometer in Measuring	W. Timothy Liu, Wenqing Tang, and Xiaosu Xie	
(S4a-06)	Stress in Tropical Cyclones	(NASA/Jet Propulsion Laboratory)	

9:45 AM Morning Break (9:45-10:15 AM)

Session 4b: Observations and Observing Strategies, Part 2 (10:15 AM -12:00 PM)

	Session Leaders		
	Scott A. Braun (NASA/GSFC) and Chris Velden (Univ. of Wisconsin/CIMSS)		
10:15 AM	Proof of Concept for Atmospheric Profiling with the High	Peter Black (SAIC/NRL/Monterey), James Doyle,	
(S4b-01)	Definition Sounding System (HDSS)	Jon Moskaitis, Eric Hendricks, Lee Harrison, Mark	
		Beaubien, and Will Jeffries (NRL/Monterey)	
10:30 AM	Airborne Phased Array Radar (APAR): The Next	James A. Moore and Wen-chau Lee (NCAR/	
(S4b-02)	Generation of Airborne Polarimetric Doppler Weather	Earth Observing Facility)	
	Radar		
10:45 AM	Near-Real Time Ocean Surface Vector Winds from	Paul S. Chang, Zorana Jelenak, and Seubson	
(S4b-03)	RapidScat	Soisuvarn (NOAA/NESDIS/STAR) and Faozi Said	
		(Global Science and Technology, Inc.)	
11:00 AM	Coastal Ocean Current and Wave Response to Hurricane	Lynn K. Shay, Jorge Martinez and Matthew Archer	
(S4b-04)	Jeanne Using High Frequency Radar Measurements:	(Univ. of Miami/RSMAS/MPO)	
	Implications for Surge Modeling		
11:15 AM	Air-Deployable Profiling Floats	Steven R. Jayne, W. Brechner Owens, and P. E.	
(S4b-05)		Robbins (Woods Hole Oceanographic Institution);	
		Jim Dufour (MRV Systems LLC); and Elizabeth R.	
		Sanabia (U.S. Naval Academy)	

11:30 AM	A Review of the 2014 Gulf of Mexico Wave Glider® Field	Patrick J. Fitzpatrick, Yee Lau, Robert Moorhead,
(S4b-06)	Program	and Adam Skarke (Mississippi State University);
		Daniel Merritt, Keith Kreider, Chris Brown, Ryan
		Carlon, Graham Hine, and Teri Lampoudi (Liquid
		Robotics, Inc.); and Alan Leonardi (NOAA/OAR/
		Ocean Exploration and Research)
11:45 AM	The NASA CYGNSS Satellite Constellation: Probing the	Christopher Ruf, Aaron Ridley, and Derek Posselt
(S4b-07)	Inner Core of Hurricanes	(Univ. of Mich.); Scott Gleason and Randall Rose
		(Southwest Research Institute, Boulder, CO); and
		John Scherrer (Southwest Research Institute, San
		Antonio, TX)

12:00 PM Forum Luncheon (12:00-1:30 PM)

Luncheon Talks: Mr. Frederick Toepfer (NOAA/NWS/OST)

• The Hurricane Forecast Improvement Project (HFIP): Progress and Accomplishments

Dr. Ronald J. Ferek (Navy/ONR)

• Understanding and Predicting the Impact of Outflow on Tropical Cyclone Intensification and

Structure

Presentation of the Richard H. Hagemeyer Award—Mr. Ray Tanabe, Director, NWS Pacific Region (Acting)

Afternoon Session Coordinator: Daniel Melendez (NWS/OST)

Session 5a: Advances in Tropical Cyclone Model Development and Evaluation, Part 1 (1:30-3:00 PM)

Session Leaders			
	James D. Doyle (NRL/Monterey) and Vijay Tallapragada (NOAA/NCEP/EMC)		
1:30 PM	Advanced Operational Global Tropical Cyclone Forecasts	Vijay Tallapragada (NOAA/NCEP/EMC)	
(S5a-01)	from NOAA's High-Resolution HWRF Modeling System		
1:45 PM	The Basin-Scale HWRF System: Verification and Analysis	Sundararaman G. Gopalakrishnan	
(S5a-02)		(NOAA/AOML/HRD), Gus Alaka and Xuejin	
		Zhang (UM/CIMAS and NOAA/AOML), Thiago	
		Quirino (NOAA/AOML/HRD), Vijay Tallapragada	
		(NOAA/NCEP/EMC), and Frank Marks Jr.	
		(NOAA/AOML/HRD)	
2:00 PM	Hurricane Forecasts with Regional NMMB: Impact of	Weiguo Wang, Vijay Tallapragada, and HWRF	
(S5a-03)	HWRF Physics	Team (NOAA/NCEP/EMC)	
2:15 PM	Identifying and Understanding Ocean Model Impacts on	Hyun-Sook Kim (NOAA/NCEP/EMC) and George	
(S5a-04)	Coupled HWRF Forecasts	Halliwell (NOAA/AOML)	
2:30 PM	Direct Assimilation of Satellite-Derived AMVs into	William Lewis and Christopher Velden (University	
(S5a-05)	HWRF: First Results	of Wisconsin/CIMSS) and Vijay Tallapragada and	
		Jaime Daniels (NOAA/NCEP/EMC)	
2:45 PM	Proposed 2015 NCEP HWRF Hurricane Forecasting	Samuel Trahan, Zhan Zhang, Qingfu Liu, Weiguo	
(S5a-06)	Model	Wang, Mingjing Tong, Banglin Zhang, Lin Zhu,	
		Keqin Wu, and Vijay Tallapragada	
		(NOAA/NCEP/EMC)	

3:00 PM Afternoon Break (3:00-3:30 PM)

Session 5b: Advances in Tropical Cyclone Model Development and Evaluation, Part 2 (3:30-5:00 PM)

Session Leaders			
	James D. Doyle (NRL/Monterey) and Vijay Tallapragada (NOAA/NCEP/EMC)		
3:30 PM (S5b-01)	Recent COAMPS-TC Development and Future Plans	James D. Doyle (NRL/Monterey), R. Hodur (SAIC), J. Moskaitis, S. Chen, E. Hendricks, H. Jin, Y. Jin, A. Reinecke, and S. Wang (NRL/Monterey)	
3:45 PM	Real-Time Probabilistic TC Prediction with Regional	J. R. Moskaitis, P. A. Reinecke, and J. Doyle	
(S5b-02)	Dynamical Models: The COAMPS-TC Ensemble and the Combined COAMPS-TC/HWRF/GFDL Multi-Model Ensemble	(NRL-Monterey)	
4:00 PM	Sensitivity of Ocean Sampling for Coupled COAMPS-TC	Sue Chen (NRL/Monterey), James Cummings	
(S5b-03)	Prediction	(SAIC), Jerome Schmidt (NRL/Monterey), Peter	
		Black (SAIC), Elizabeth Sanabia (U.S. Naval	
		Academy, and L. K. (Nick) Shay (UM/RSMAS)	

4:15 PM (S5b-04)	Further Exploring the Potential for Assimilation of Unmanned Aircraft Observations to Benefit Hurricane Analyses and Forecasts	Jason A. Sippel (IM Systems Group and NOAA/EMC), Fuqing Zhang and Yonghui Weng (Penn St. Univ.), Scott A. Braun (NASA/GSFC), and Daniel J. Cecil (NASA/MSFC)
4:30 PM (S5b-05)	NOAA's Use of the Coyote UAS in Hurricane Edouard to Enhance Basic Understanding and Improve Model Physics	Joseph J. Cione (NOAA/AOML/HRD at the Earth System Research Laboratory), Kristie Twining NOAA/OAMO), Drew Osbrink and Eric Redweik (Sensintel Corporation), Jim Etro and Dave Downer (ItriCorp), Evan Kalina (University of Colorado), Ligia Bernardet (NOAA/DTC), and Tony Brescia (Naval Air Systems Command)
4:45 PM (S5b-06)	Evaluating Models and Understanding Hurricane Processes with the use of the JPL Tropical Cyclone Information System	Svetla M. Hristova-Veleva (NASA/JPL); M. Boothe (NPS-Monterey); S. Gopalakrishnan (NOAA/AOML/HRD); Z. Haddad, M. P. Johnson, B. Knosp, B. Lambrigtsen, and P. P. Li (NASA/JPL); M. Montgomery (NPS/Monterey); N. Niamsuwan, W. L. Poulsen, and T.P. Shen (NASA/JPL); V. Tallapragada (NOAA/NCEP/EMC); S. Tanelli (NASA/JPL); S. Trahan (NOAA/NCEP/EMC); and F. J. Turk and Q. Vu (NASA/JPL)

5:00 PM Adjourn for the day (Evening on your own)

DAY 4 - Thursday, March 5, 2015

8:00 AM Opening/Administrative Remarks: Michael Bonadonna (OFCM)

Morning Session Coordinator: Michael Bonadonna (OFCM)

Session 6: The Future of the IHC—Agency Perspectives

Session Moderator			
Mr. David McCarren (OFCM)			
8:10 AM -	Open Discussion		
9:10 AM	•		

Session 7: Products, Services, and Societal Impact (9:15-10:15 AM)

Session Leader CDR Elizabeth Sanabia (Navy/U.S. Naval Academy)		
9:15 AM (S7-01)	A Global Investigation of the Impacts of Landfalling Tropical Cyclones on Societies	Denise Balukas, Elizabeth A. Ritchie, and Kim M. Wood (University of Arizona)
9:30 AM (S7-02)	The 2014 Satellite Proving Ground at the National Hurricane Center	Mark DeMaria, Jack Beven, Michael Brennan, Hugh Cobb, and Nelsie Ramos (NOAA/NCEP/NHC); Andrea Schumacher (CIRA/CSU); and Michael Folmer (Univ. of Maryland/CICS)
9:45 AM (S7-03)	NRL Tropical Cyclone Satellite Web Resource	Jeff Hawkins, Kim Richardson, Rich Bankert, Mindy Surratt, Song Yang, and Jeremy Solbrig (NRL/ Monterey), Josh Cossuth (NRC/Monterey), Charles Sampson (NRL/Monterey), John Kent (SAIC), and Arunas Kuciauskas (NRL/Monterey)
10:00 AM (S7-04)	A Completed Hurricane Surge Visualization Model and Ongoing Efforts to Use the Model to Assess Public Understanding of Risks due to Storm Surge	B. Lee Lindner, Stephen Duke, and Janet Johnson (College of Charleston) and Frank Alsheimer (NOAA/NWS/Charleston)

10:15 AM Morning Break (10:15-10:45 AM)

Session 8: Tropical Cyclone Research Plan Mid-Course Assessment—Operational Needs and Research Priorities

Panel Moderator		
Mr. David McCarren (OFCM)		
10:45 AM -	Panelists: NHC: Dr. Richard Knabb	
11:45 AM	CPHC: Mr. Ray Tanabe	
	JTWC: Mr. Robert J. Falvey	
	Dr. Frank Marks, Jr., WG/TCR Co-Chair and Director, Hurricane Research Division (NOAA/AOML)	
	Dr. Ronald J. Ferek, WG/TCR Co-Chair and Program Officer, Marine Meteorology Program (ONR)	

Final Plenary Session

Session Leader Daniel Melendez (NWS/OST)		
11:45 AM	WG/HWSOR: Action Item Review	Dr. Edward Rappaport (NCEP/NHC) Chairperson, WG/HWSOR
12:00 PM	Forum Wrap-Up	Mr. David McCarren Federal Coordinator for Meteorological Services and Supporting Research (Acting)
12:30 PM	Adjourn	

	POSTERS FOR THE 2015 TROPICAL CYCLONE RESEARCH FORUM			
	Poster Session: Tuesday, March 3, 2015, 5:30-7:30 PM (cash bar and hors d'oeuvres)			
P01	Upper Ocean Observations in Hurricane Edouard	Eric W. Uhlhorn (NOAA/AOML/HRD), Benjamin Jaimes (UM/RSMAS), Joseph J. Cione (NOAA/ AOML/HRD) and Lynn K. (Nick) Shay (UM/RSMAS)		
P02	Observations and Modeling of Saharan Dust Interaction with a Tropical Cyclone	Scott A. Braun, J. J. Shi, and W. K. Tao (NASA/GSFC)		
P03	An Update on Techniques Using the Deviation Angle Variance (DAV) for Tropical Cyclone Intensity, Genesis, and Surface Wind Field Estimation	J. Scott Tyo, Oscar G. Rodríguez-Herrera, Kim M. Wood, Klaus P. Dolling, and Elizabeth A. Ritchie (University of Arizona)		
P04	Support for Users and Developers of the Hurricane WRF Model	Ligia Bernardet (NOAA GSD, CIRES/CU, and DTC), Vijay Tallapragada (NOAA/NCEP/EMC), Mrinal Biswas (NCAR), <i>Christina Holt</i> (NOAA GSD, CIRES/CU, and DTC), Samuel Trahan (NOAA/NCEP/EMC and IMSG), and Laurie Carson (NCAR)		
P05	Evolution of the Upper-Level Outflow During Hurricanes Iselle and Julio (2014) in the Navy Global Environmental Model (NAVGEM) Analyses	Sara C. Reynolds, Bradford S. Barrett, and Elizabeth R. Sanabia (U.S. Naval Academy)		
P06	Observations of the Upper-Level Outflow During Hurricanes Iselle and Julio (2014)	Julie K. Stapleton, Anthony L. Borrego, Bradford S. Barrett, and Elizabeth R. Sanabia (U.S. Naval Academy)		
P07	The Effect of Landfall or Coastal Interaction on the Performance of Navy Tropical Cyclone Track and Intensity Forecasts	Carey Dickerman and Raymond C. Lee (Fleet Numerical Meteorology and Oceanography Center)		
P08	Impact of CYGNSS Data on Hurricane Analyses and Forecasts in a Regional OSSE Framework	Brian McNoldy, Bachir Annane, Javier Delgado, Lisa Bucci, Robert Atlas, and Sharanya Majumdar (University of Miami/RSMAS)		
P09	Wind Speed Retrievals with GPU Accelerated Matched Filter	Eddie Massey III (Claflin University)		
P10	On the Continued Need for Public-Private Partnerships in the Observation of Land-falling Tropical Cyclones	Marty Bell (WeatherFlow, Inc.)		
P11	Kuroshio Extension Observatory (KEO) Measurements of the Upper-Ocean Response to Tropical Cyclones in the Western North Pacific	Nicholas A. Bond (University of Washington), Meghan F. Cronin and Hyun-Sook Kim (NOAA)		
P12	GOES-R is Coming - Are You Ready!	Steven J. Goodman (NOAA/NESDIS)		

POSTERS FOR THE 2015 TROPICAL CYCLONE RESEARCH FORUM Poster Session: Tuesday, March 3, 2015, 5:30-7:30 PM (cash bar and hors d'oeuvres)		
P13	CINAR Tempests: A Rapid Response Program for Oceanographic Measurements during East Coast Hurricane Passage	Glen Gawarkiewicz (Woods Hole Oceanographic Institution) and CINAR Tempests Team (from WHOI, Rutgers U., U. Maine, U. Maryland, Gulf of Maine Research Institute)