9th NOAA TBPG Workshop
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Roundup Presentation

Joint Hurricane Testbed

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FY17 Highlights

Joint Hurricane Testbed

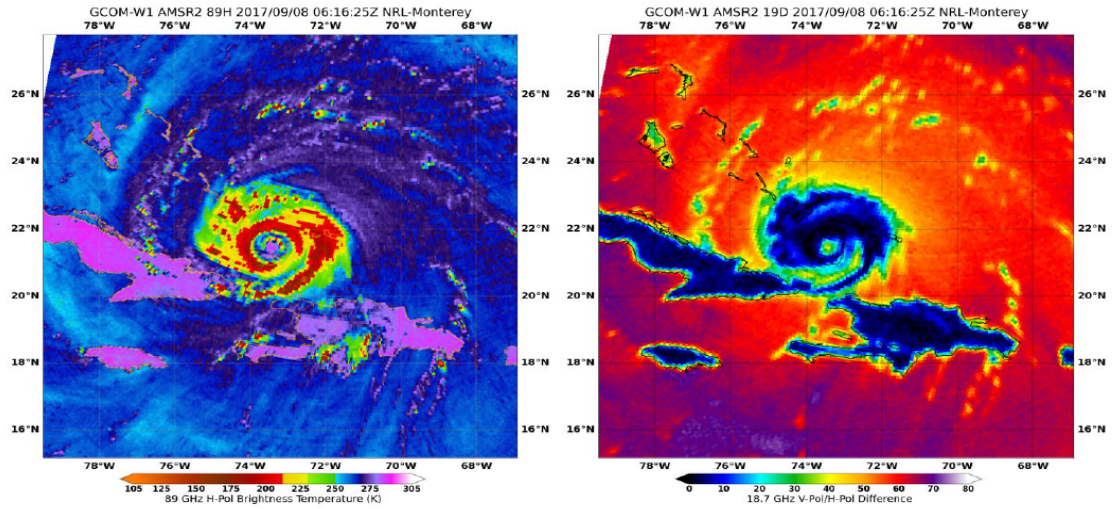
- **Guidance on Observational Undersampling over the Tropical Cyclone Lifecycle**
  - Assessment of systematic underestimates of hurricane intensity as measured by different instruments

Undersampling Corrections for a Single Figure-4			
Size/Category	Tropical Storm	Category 1-2	Category 3-5
Small RMW < 15 nm	10%	5%	2%
Medium 15 nm < RMW < 30 nm	15%	9%	5%
Large RMW > 30 nm	19%	11%	8%

FY17 Highlights

Joint Hurricane Testbed

- **Passive Microwave Data Exploitation via the NRL Tropical Cyclone Webpage**
  - Multiple upgrades of microwave imagery processing in the Naval Research Laboratory's Tropical Cyclone Webpage

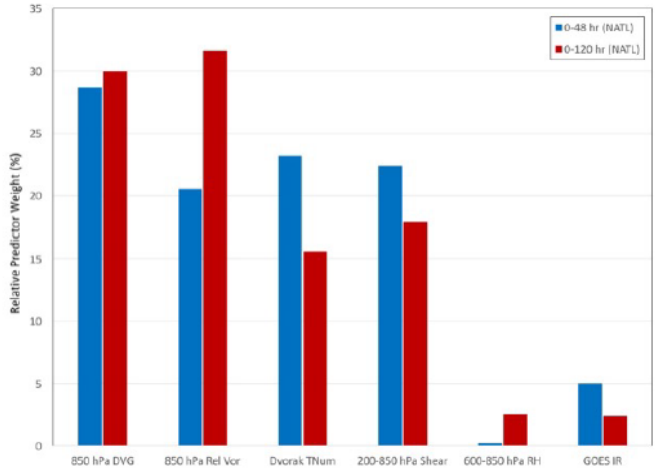


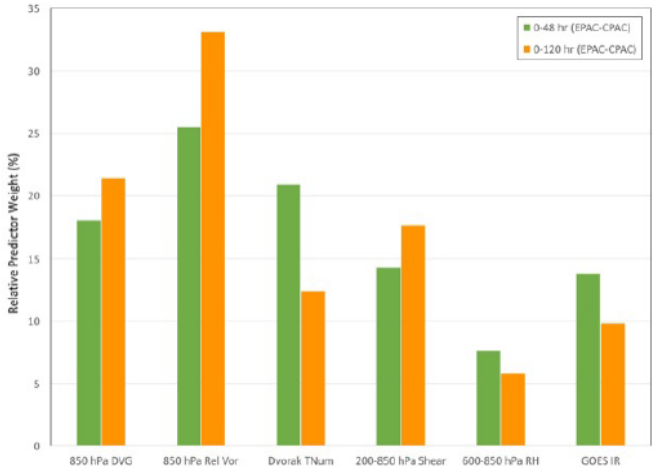
Sample microwave imagery from the NRL web page

FY17 Highlights

Joint Hurricane Testbed

- **Improvement to the Tropical Cyclone Genesis Index (TCGI)**
  - Implement improvements to the TCGI that was transitioned to operations at the NOAA National Hurricane Center (NHC) in October 2014





Relative weights of TCGI predictors for 48-h and 120-h in (left) NATL (right) EPAC

FY17 Transition Metrics

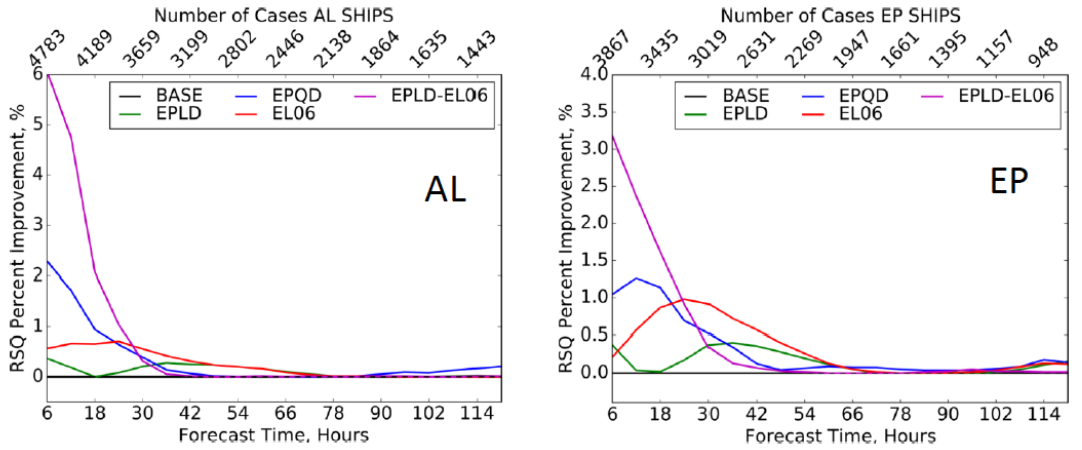
Joint Hurricane Testbed

Major Tests Conducted	Transitioned to Operations (RL9)	Recommended for Transition to Operations (RL9)	Advanced To Experimental Testing (RL8)	Further Demonstration/ Development (RL 5-7)	Rejected For Further Testing
Estimate of TC undersampling	X				
NRL web page upgrades	X				
TCGI upgrades			X		
Improvements to statistical TC forecast models			X		
Using passive microwave "ring" to forecast RI				X	
Improve statistical RI forecasts with passive microwave data				X	
Improved eyewall replacement forecasting				X	
Coastal tide model				X	

FY18 Highlights: Update and Plans

Joint Hurricane Testbed

- **Improvements to Operational Statistical Tropical Cyclone Intensity Forecast Models Using Wind Structure and Eye Predictors**
  - Short-term statistical intensity forecasts improve considerably when size/eye information is added

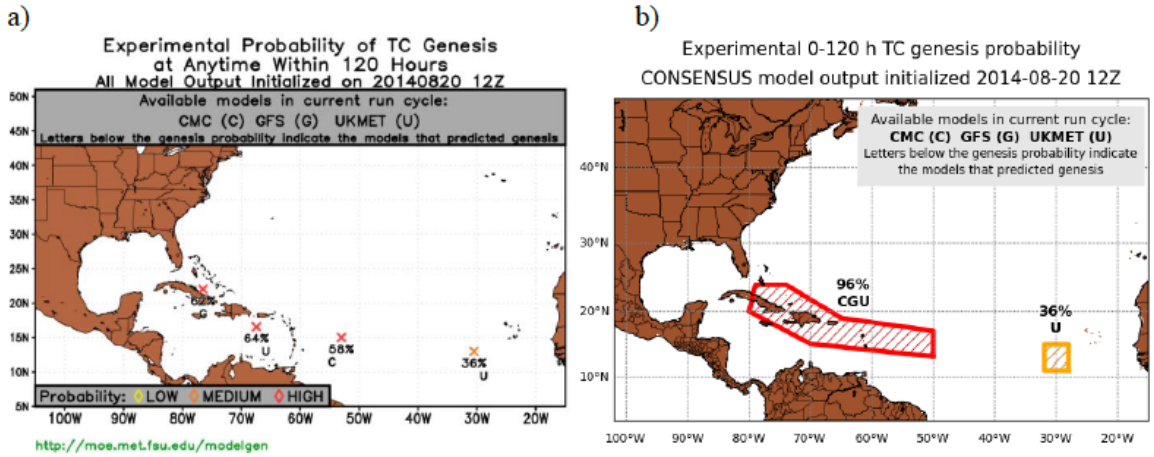


Percent improvement of intensity forecast associated with new predictors

FY18 Highlights: Update and Plans

Joint Hurricane Testbed

- **Improvements and Extensions to an Existing Probabilistic TC Genesis Forecast Tool Using and Ensemble of Global Models**
  - Further develop a successful real-time statistical-dynamical tropical cyclone (TC) genesis guidance tool based on global model output



Original (left) and proposed (right) graphical output from the genesis tool

Questions

Joint Hurricane Testbed

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