



<http://www.nhc.noaa.gov/jht/index.shtml>



# Joint Hurricane Testbed (JHT) 2010 Update

## Transition from Research to Operations

**Jiann-Gwo Jiing**

Chief, Technical Support Branch, NHC  
JHT Director

**Shirley Murillo**  
NOAA/HRD

**Chris Landsea**  
NHC

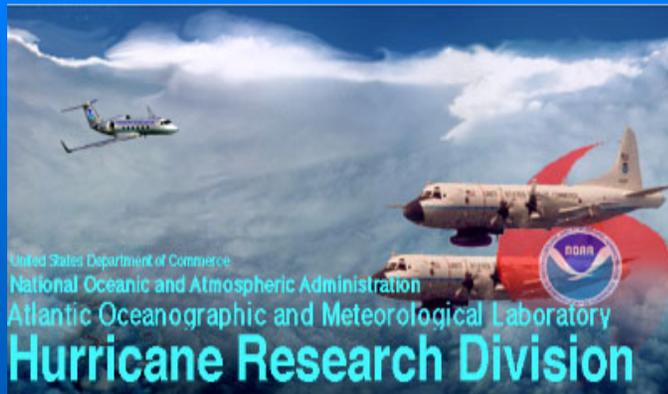
NOAA Hurricane Conference  
30 November, 2010

# The Forecasters

National Hurricane Center  
Tropical Prediction Center  
Weather Forecast Offices



## The Researchers (them):



UNIVERSITY OF MIAMI  
**ROSENSTIEL  
SCHOOL**  
OF MARINE AND ATMOSPHERIC SCIENCE



How to  
bridge  
the  
“valley  
of  
death”?

# JHT Process

- **Principal Investigators apply for funding through NOAA**
- **A seven member Steering Committee rates all proposals**
- **Funded projects are tested during one or two hurricane seasons in conjunction with NHC/ Environmental Modeling Center points of contact**
- **At the project's end, each are evaluated by NHC/EMC staff**
- **Implementation of successful projects are then carried out by NHC/EMC staff/PIs**

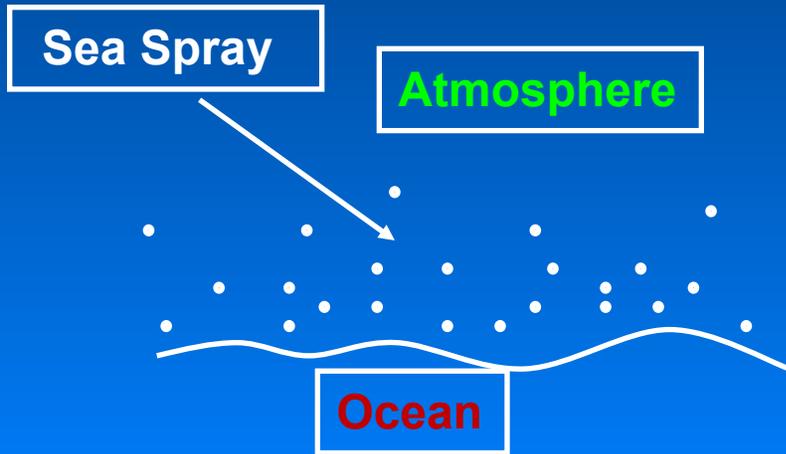
# Summary of JHT projects 2001-2010

- **1) Number of projects supported: 62**
  - 50 completed, 35.5 accepted for operational implementation
  - Number of projects rejected: 5
  - Number of projects completed but pending further investigation (decisions deferred): 9.5
  - Number of projects in process: 12
- **2) Implementation**
  - Number of projects implemented: 31.5
    - Number of numerical modeling related projects implemented by EMC/NCO: 10
    - Number of projects implemented by NHC: 21.5
  - Number of projects accepted but not yet fully implemented by NHC: 4

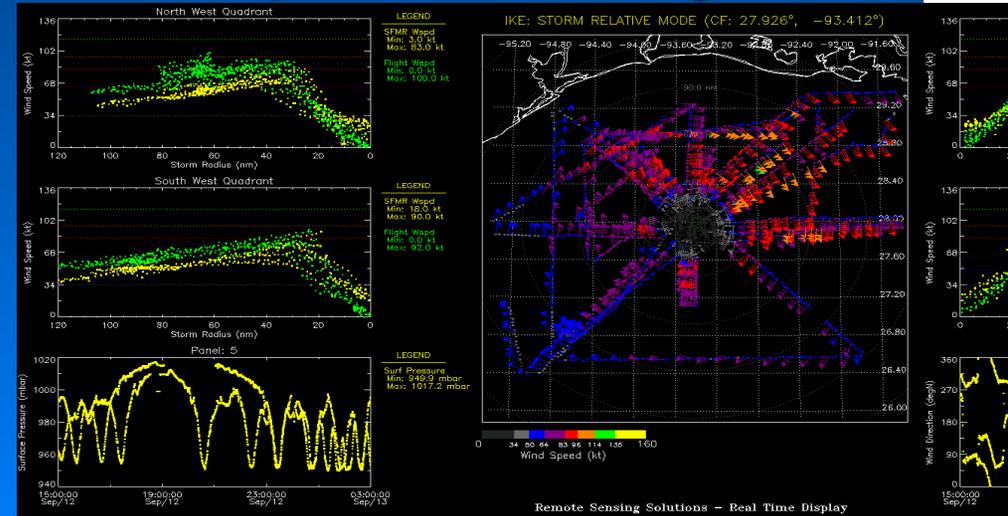
Note:

- 1) Implementation is defined when a project is completed, accepted, and the technique installed on NCEP/NCO or NHC operational systems and runs on operational time frame.
- Some techniques were “implemented” on JHT platform for testing.

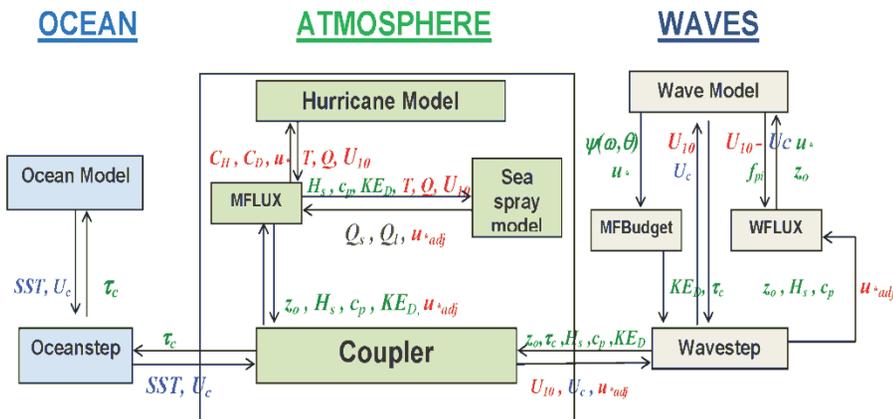
# Highlights of 4th Round Completed Projects



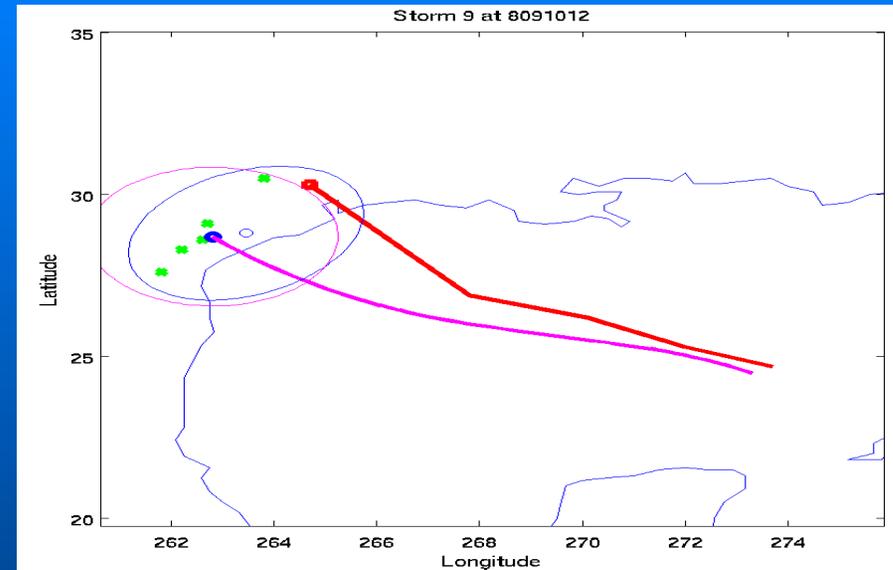
Sea Spray Parameterization – Bao/Fairall



Visualization Tool & SFMR – Carswell/Uhlhorn



Coupled TC-Wave-Ocean - Ginis



TC Dressing – Hansen

# Factors Considered in NHC Decisions on Operational Implementation

- **Forecast or Analysis Benefit:** expected improvement in operational forecast and/or analysis accuracy
- **Efficiency:** adherence to forecaster time constraints and ease of use needs
- **Compatibility:** IT compatibility with operational hardware, software, data, communications, etc.
- **Sustainability:** availability of resources to operate, upgrade, and/or provide support

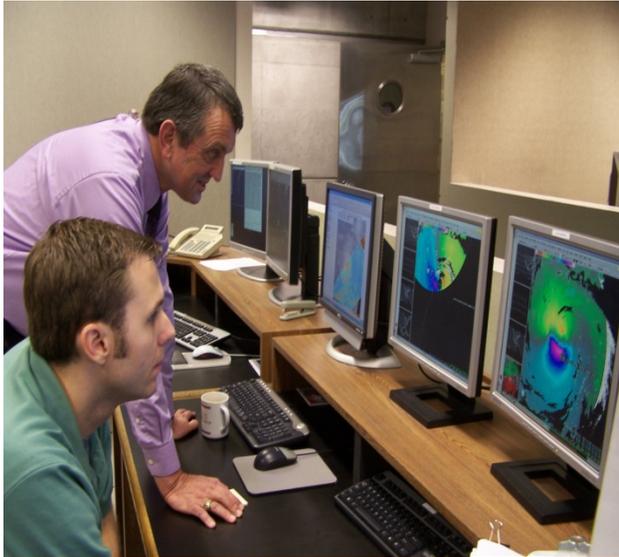
# 2009-2011 Major Activities

## 5th Round Project Focus Areas

Primary Area of Focus	# of Projects
Improvements to dynamical models (for track, intensity, and precipitation forecasts)	5
Statistical intensity forecast guidance	3
Enhancements to observed data, assimilation	1
Tropical cyclone structure/wind/wave distribution	2
Enhancements to operational environment	1
<b>Total</b>	<b>12</b>

# Challenges for 2010 and 2011

- **Implement newly accepted projects (NHC)**
  - JHT final review/reports to NHC Director
  - NHC Director makes implementation decision
  - Staff at NHC works to implement accepted projects
- **Test and evaluation (with NHC & EMC)**
  - Prepare real-time testing & evaluation for 5<sup>th</sup> round projects
  - Set up necessary software code and data flow
- **Prepare for 6<sup>th</sup> round (FY11) projects**
  - Funding announcement – July 2010
  - LOIs (30 received/reviewed)– August 2010
  - Full Proposals (23 received/being reviewed) – Oct 2010
  - Funding Decisions – March 2011
  - Projects Start – August 2011



# **NHC's Visiting Scientist Program**



**Bring in Researchers and Outside Forecasters Annually**

**Visit During the Peak (Aug-Oct) of the Season**

**Learn About Operational Tools, Resources, & Constraints**

**NHC Forecasters Exposed to New Ideas & Methods**

**Funded through Hurricane Forecast Improvement Prog.**

# Acknowledgements

- **JHT Steering Committee**
- **Shirley Murillo, JHT Admin. Asst.**
- **Chris Landsea, JHT Admin. Asst.**
- **Jose Salazar, JHT meteorologist/programmer**
- **NHC and EMC forecaster and points of contact**
- **NHC/Technical Support Branch staff**
- **JHT principal investigators and other funded participants**
- **John Gaynor/Roger Pierce (USWRP)**
- **NHC admin staff**



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