

# Joint Hurricane Testbed (JHT) 2008 Update

Transition from Research to Operations

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# Outline

- Summary of JHT projects 2001-2008
- Major 2008 activities at JHT & TPC
- Challenges ahead



# Summary of JHT projects 2001-2008

- **1) Number of projects supported: 50**
  - 40 completed, 30 accepted for operational implementation
- **2) Number of numerical modeling related projects implemented by EMC/NCO: 10**
- **3) Number of projects implemented by NHC: 16.5**
- **4) Number of projects accepted but not yet fully implemented by NHC: 3.5**
- **5) Number of projects rejected: 5**
- **6) Number of projects completed but pending further investigation (decisions deferred): 5**
- **7) Number of projects in process: 10**

Note:

- 1) Implementation is defined for a project that is completed, accepted, and fully installed on NCO or NHC operational systems and runs or executed on operational time frame.
- More projects were “implemented” on some platform for testing



# 2008 Major Activities

- **Completion of the third round (2005-2007) projects**
  - Completed in August 2007
  - Final evaluation (NHC/EMC POCs & JHT)
    - September-December 2007
  - Decision on acceptance for implementation (NHC and EMC Directors)
    - 4 criteria for acceptance
    - Decisions made January 2008
      - 12 projects accepted
      - 3 projects deferred pending further evaluation
  - Implementaton
    - 11 implemented: 4 by EMC/NCO & 7 by NHC



# 2008 Major Activities

- Second year funding renewal for 4<sup>th</sup> round projects
- Testing of 4<sup>th</sup> round projects
  - Collaboration with PI
  - Programming
  - Establishing data flow
  - Generating output for forecaster use/evaluation

# 4th Round Project Focus Areas

<b>Primary Area of Focus</b>	<b># of Projects</b>
Improvements to dynamical models (for track, intensity, and precipitation forecasts)	5
Statistical intensity forecast guidance	1
Enhancements to observed data, assimilation	0
Tropical cyclone structure/wind/wave distribution	2
Track forecast guidance	1
Enhancements to operational environment	1
<b>Total</b>	<b>10*</b>



# 2008 Major Activities

- Preparation for 5<sup>th</sup> round projects
  1. Draft Federal Funding Opportunity (FFO) (March 08)
    - Centers priorities
    - Evaluation criteria
    - FFO published early July
    - SC Review of Pre-applications (September)
    - PIs submitting full proposals (Oct 30)
    - SC Review of full proposals (ongoing)

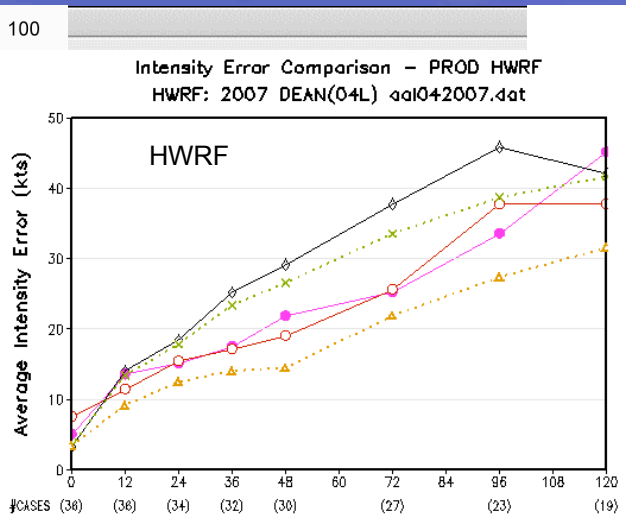
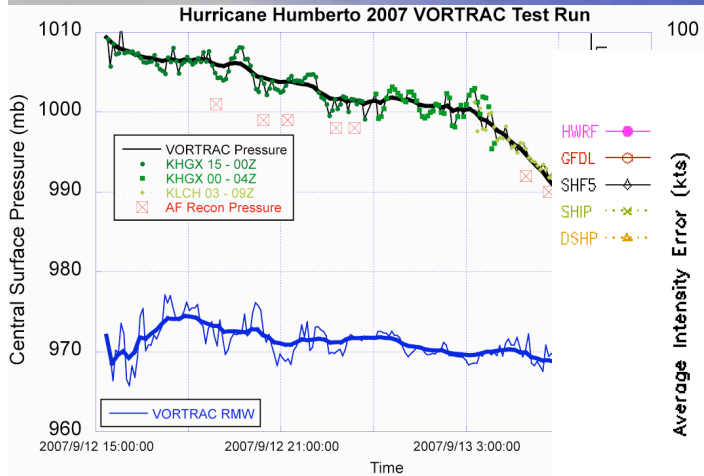
# Implementation (NHC)

- **Some relative easy**
- **Some very complicated**
- **TPC contributes  $\geq 0.5$  FTE on implementation**
- **JHT IT facilitator assists in the process**
- **NCEP/EMC and NCO also contributed**

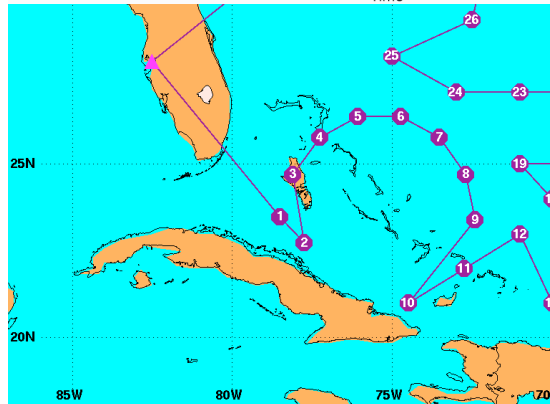
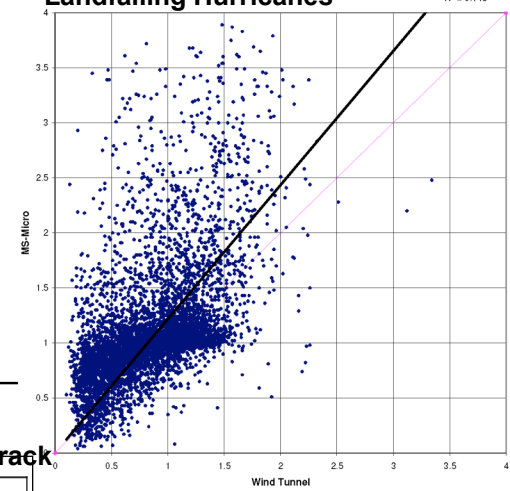
**Operational Centers are not funded for this task**



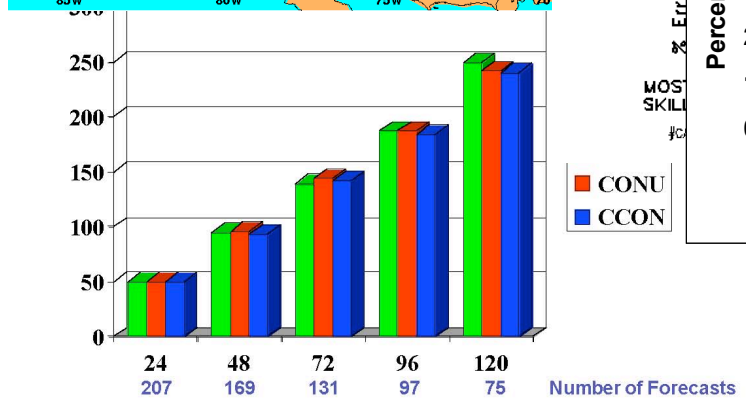
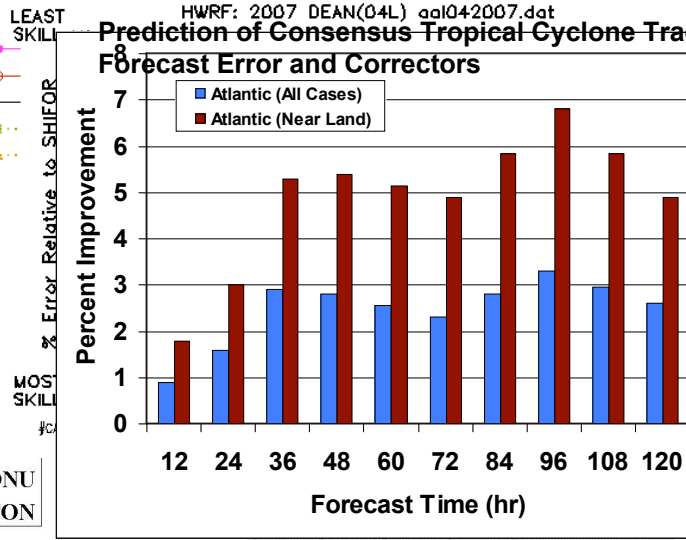
# Highlights of Implemented Projects



## Mapping of Topographic Effects on Maximum Sustained Surface Wind Speeds in Landfalling Hurricanes



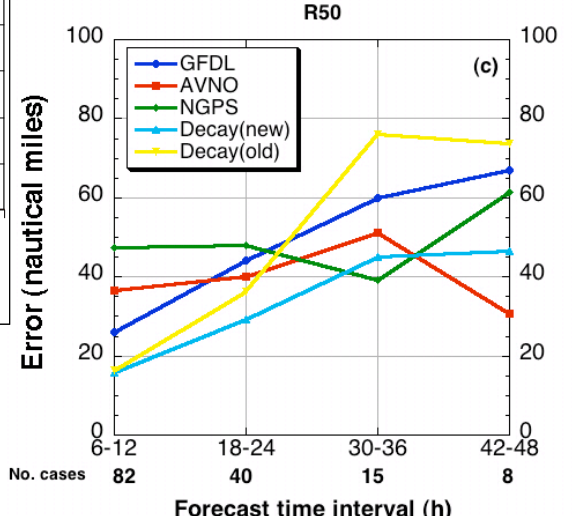
## Prediction of Consensus Tropical Cyclone Track



1	1	1	1	1
0	0	0	0	0
3	3	4	5	5
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19	32	35	40	42

Figure 1: Scatter plot of MS-Micro predicted speed-up factors versus speed-up factors measured in the wind tunnel study of Chock *et al.*(2002) for the islands of O'ahu and Kaua'i

## tropical cyclone wind radii utilizing an Empirical inland wind decay model



# Challenges for FY09

- **Fifth round funding processes**
  - Steering committee review proposals
  - Rank and select proposals for funding
  - Work with Grants Office to fund selected projects
  - Find Point of contacts among NHC forecasters and support staff
  - Work with PIs to set up timelines for their projects
- **Test and evaluation**
  - Prepare real-time testing & evaluation for 4<sup>th</sup> and 5<sup>th</sup> round projects
  - Set up necessary software code and data flow.
- **Manage 4<sup>th</sup> & 5<sup>th</sup> round projects**
  - Progress reports
  - Final reports for 4<sup>th</sup> round projects
  - POC feedback
  - JHT final review/reports
- **Implement newly accepted projects (TPC)**



# Acknowledgements

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

# JHT Website

Go to [www.nhc.noaa.gov](http://www.nhc.noaa.gov)

Joint Hurricane Testbed - Home - Mozilla Firefox

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

NCEP Systems Monitor



- JHT Home
- Terms of Reference (PDF)
- Staff
- Steering Committee
- Main Activities
- Highlights - 2001 to present
- New Projects (2007-2009)
- Current Projects (2005-2007)
- Past Projects
- Administrative Presentations and Information

### Mission Statement

The mission of the Joint Hurricane Test Bed is to transfer more rapidly and smoothly new technology, research results, and observational advances of the United States Weather Research Program (USWRP), its sponsoring agencies, the academic community and other groups into improved tropical cyclone analysis and prediction at operational centers.

### WHAT'S NEW

**Updated May 8, 2006:**  
Please read about the new projects for 2007-2009

**Updated November 21, 2006:**  
The JHT FY07 AFFO Application Deadline has been reopened.

**Updated June 16, 2006:**  
The JHT FY07 Announcement of Federal Funding Opportunity has been released.

**Added April 26, 2006:**

- The 2005 First Year Reports are available in the Project Table
- Joint Hurricane Test Bed (JHT): 2006 IHC Update, Dr. Jiann-Gwo Jiing, JHT Director, Technical Support Branch Chief, TPC/NHC, Interdepartmental Hurricane Conference, 22 March 2006 presentation. (PDF format)

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