



Joint Hurricane Testbed (JHT) 2008 IHC Update

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JHT Director
NHC**

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NHC**

5 March 2008

Outline

- 1. Status of Third Round Projects (FY05-06)**
- 2. Status of Fourth Round Projects (FY07-08)**
- 3. Challenges for 2008**

Status of 3rd round JHT projects (FY05-07)

- NOAA projects completed in April 2007
- Non-NOAA projects completed in August 2007
- TPC/NHC POC provided evaluation and feedback
- JHT staff conducts IT evaluation
- JHT staff prepares final evaluations and reports to TPC Director

Status of 3rd round JHT projects (FY05-07)

- Center Directors' decision on project acceptance
 - 15 projects completed (August 2007)
 - 11.5 projects accepted for operational implementation
 - 3.5 projects require further evaluation
- Status of implementation
 - 10 accepted projects implemented

JHT Third Round (FY05-06) Projects

Dynamical model upgrades, observational, and assimilation projects

Proposal Title	PIs	NHC POC	S
Hurricane Model Transition to Operations at GFDL/NOAA	Bender	Pasch, Rhome	I
Hurricane Model Transition to Operations at GFDL/NOAA	Tuleya	Pasch	I
Drag Coefficient and Wind Speed Dependence in TCs	Powell	Franklin	I
Dynamic Initialization to Improve TC Intensity and Structure Forecasts	Liou	Pasch	P
Operational SFMR-NAWIPS Airborne Processing and Data Distribution Products	Carswell, Black, Chang	Beven, Mainelli, Sisko, Lauer	P/I
Mapping of Topographic Effects on Maximum Sustained Surface Wind Speeds in Landfalling Hurricanes	Miller	Beven	I
Assimilating Moisture Information from GPS Dropwindsondes into the NOAA Global Forecast System	Aberson	Franklin, Blake	I
WSR-88D-derived Diagnosis of Tropical Cyclone Intensity Changes Near Landfall	Lee, Harasti	Stewart, McAdie	5 I

JHT Third Round (FY05-06) Projects

Intensity, structure, and track projects

Proposal Title	PIs	NHC POC	S
Improved Statistical Intensity Forecast Models	Knaff, DeMaria, Kaplan	Avila, Sisko	I
Enhancement of SHIPS Using Passive Microwave Imager Data	Cecil	Stewart, Sisko	P
Eastern Pacific Ocean Heat Content Estimates for SHIPS Forecasts	Shay, DeMaria	Avila, Mainelli	P
Continued Development of Tropical Cyclone Wind Probability Products	Knaff, DeMaria	Lauer	I
Estimating Tropical Cyclone Wind Radii Utilizing an Empirical Inland Wind Decay Model	Kaplan	Stewart,	I
Prediction of Consensus TC Track Forecast Error and Correctors to Improve Consensus TC Track Forecasts	Goerss	Beven	I
Development and Implementation of NHC/JHT Products in ATCF	Sampson	Sisko	I

Highlights of Implemented 3rd Round Projects

07091300AL0807_shipsmi.txt - /home/ships/data/outgoing/text/

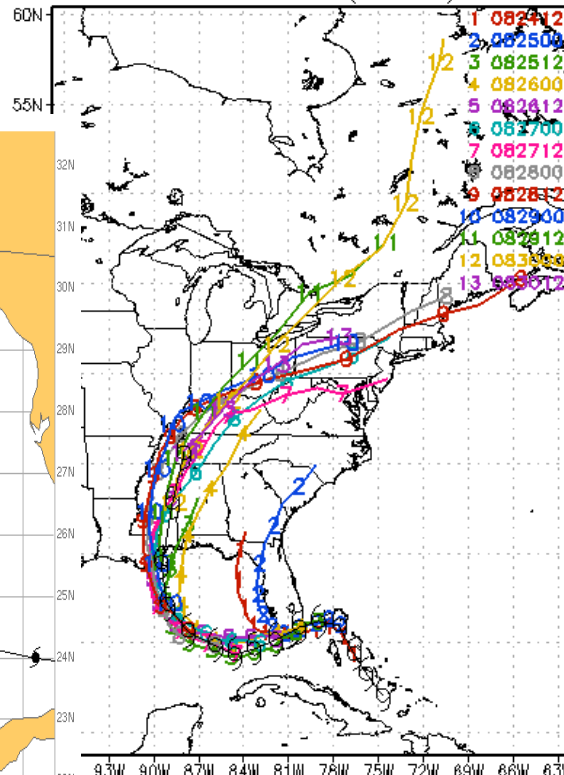
File Edit Search Preferences Shell Macro Windows Help

ATLANTIC SHIPS-MI INTENSITY FORECAST

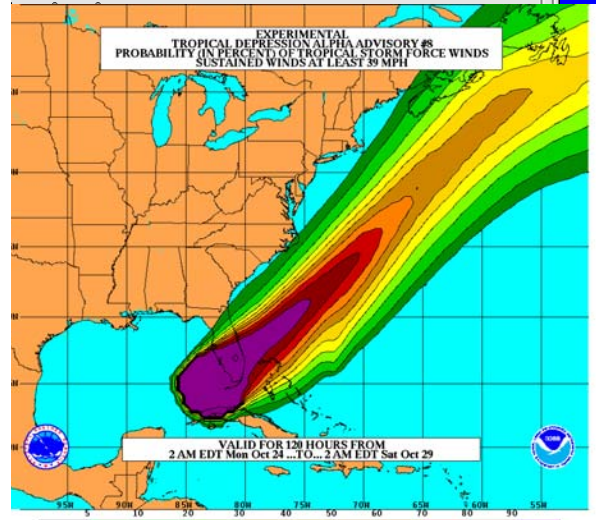
STORM: 08
 FORECAST TIME: 09/13/2007 0000 UTC
 OVERPASS TIME: 09/12/2007 2330 UTC

	0	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120
0	9/13 02	9/13 08	9/13 14	9/13 20	9/14 02	9/14 08	9/14 14	9/14 20	9/15 02	9/15 08	9/15 14	9/15 20	9/16 02	9/16 08	9/16 14	9/16 20	9/17 02	9/17 08	9/17 14	9/17 20	9/18 02
1	30	31	32	34	36	41	47	54	60	66	72	78	84	90	96	102	108	114	120		
2	4	9	9	6	6	8	17	17	22	24	26	25	25	25	25	25	25	25	25	25	25
3	289	302	322	304	262	278	231	249	231	258	247	274	266	266	266	266	266	266	266	266	266
4	27.9	27.9	27.9	27.9	27.9	27.9	28.0	28.0	28.1	28.4	28.6	28.8	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9
5	135	134	134	133	133	133	135	135	137	142	145	147	148	148	148	148	148	148	148	148	148
6	129	128	126	125	124	124	126	127	129	134	136	135	134	134	134	134	134	134	134	134	134
7	-53.7	-53.9	-54.0	-53.9	-54.0	-54.2	-54.1	-54.2	-54.3	-54.8	-55.0	-55.4	-55.4	-55.4	-55.4	-55.4	-55.4	-55.4	-55.4	-55.4	-55.4
8	9.8	10.2	10.4	11.0	11.2	10.9	11.3	10.9	11.7	10.9	11.0	10.5	11.2	11.2	11.2	11.2	11.0	10.5	11.2	11.2	11.2
9	40	39	37	37	38	36	35	32	32	33	40	45	48	48	48	48	48	48	48	48	48
10	-1	-2	-2	-1	-3	-3	7	1	5	4	9	6	0	0	0	0	0	0	0	0	0
11	2	-9	-20	-36	-32	-36	-22	-29	-20	-16	-14	-3	2	2	2	2	2	2	2	2	2
12	-9	-7	-5	-11	-5	-11	-9	-14	-6	-1	-5	1	-6	-6	-6	-6	-6	-6	-6	-6	-6
13							1126	1141	1064	983	907	812	696	696	696	696	696	696	696	696	696
14							15.2	15.7	16.4	17.1	17.7	18.2	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6
15							-50.4	-51.6	-53.0	-54.6	-56.5	-58.0	-59.1	-59.1	-59.1	-59.1	-59.1	-59.1	-59.1	-59.1	-59.1
16							6	7	8	9	9	7	5	5	5	5	5	5	5	5	5
17							51	55	60	62	68	73	74	74	74	74	74	74	74	74	74

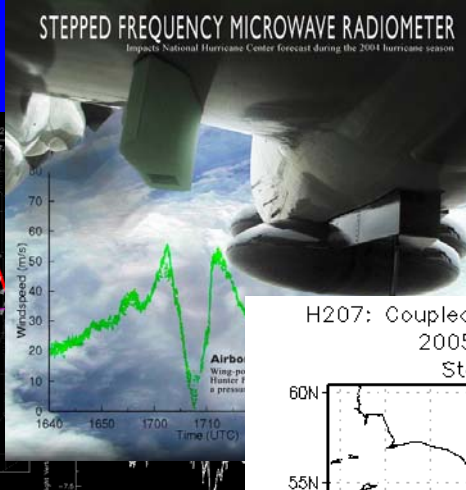
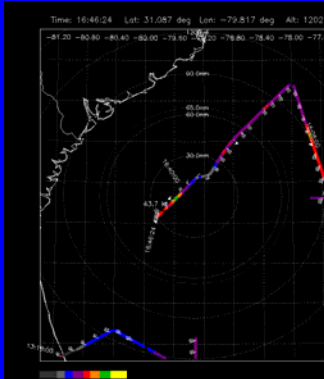
H207: Coupled HWRP (2007 Operational Version)
 2005 Tropical Cyclone Tracks
 Storm: AL1205 (KATRINA)



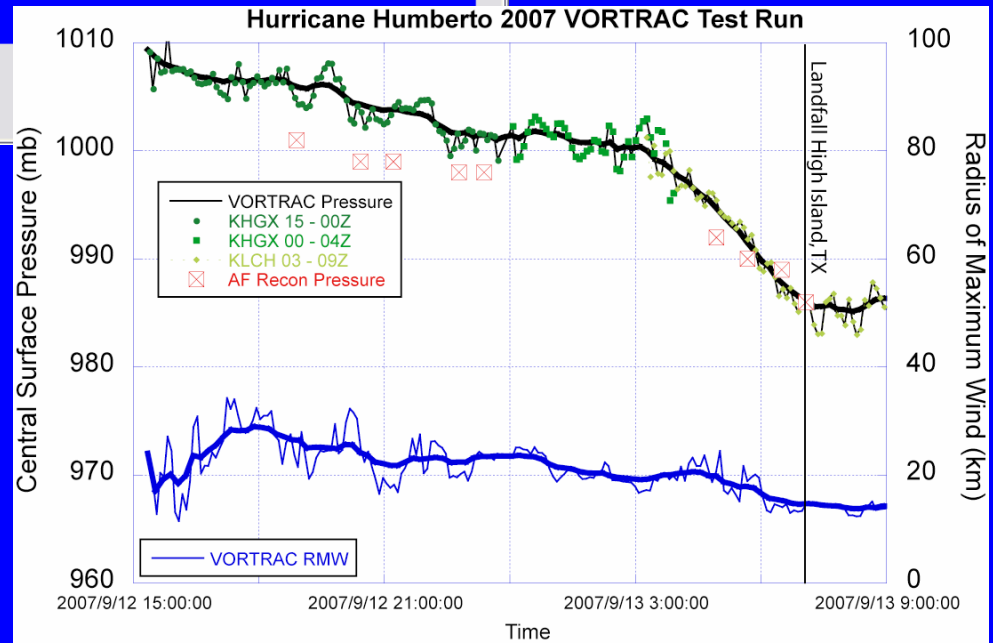
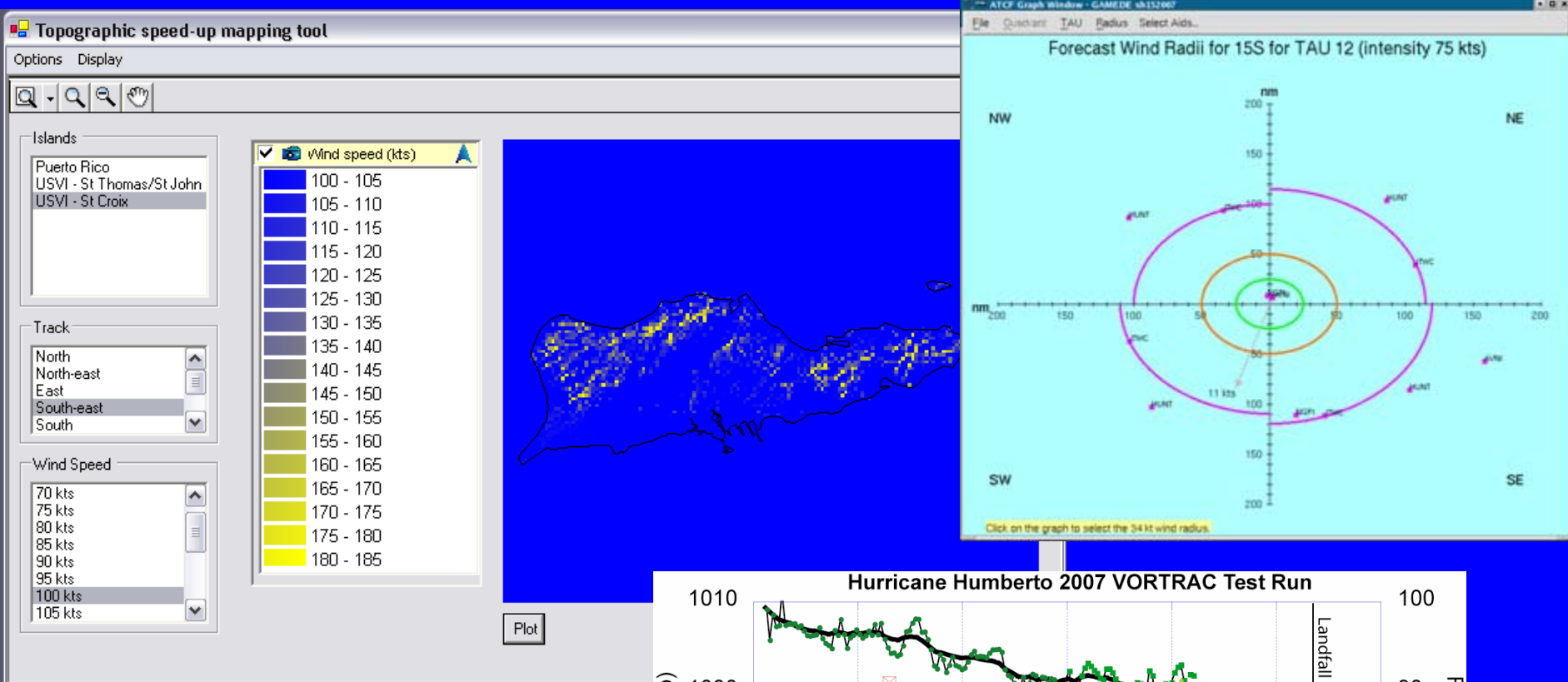
casts: Beginning 2005082412 for H207 model
 erved: Beginning 2005082312, every 12 hours



NCEP HW



Topographic Speed-up Mapping Tool

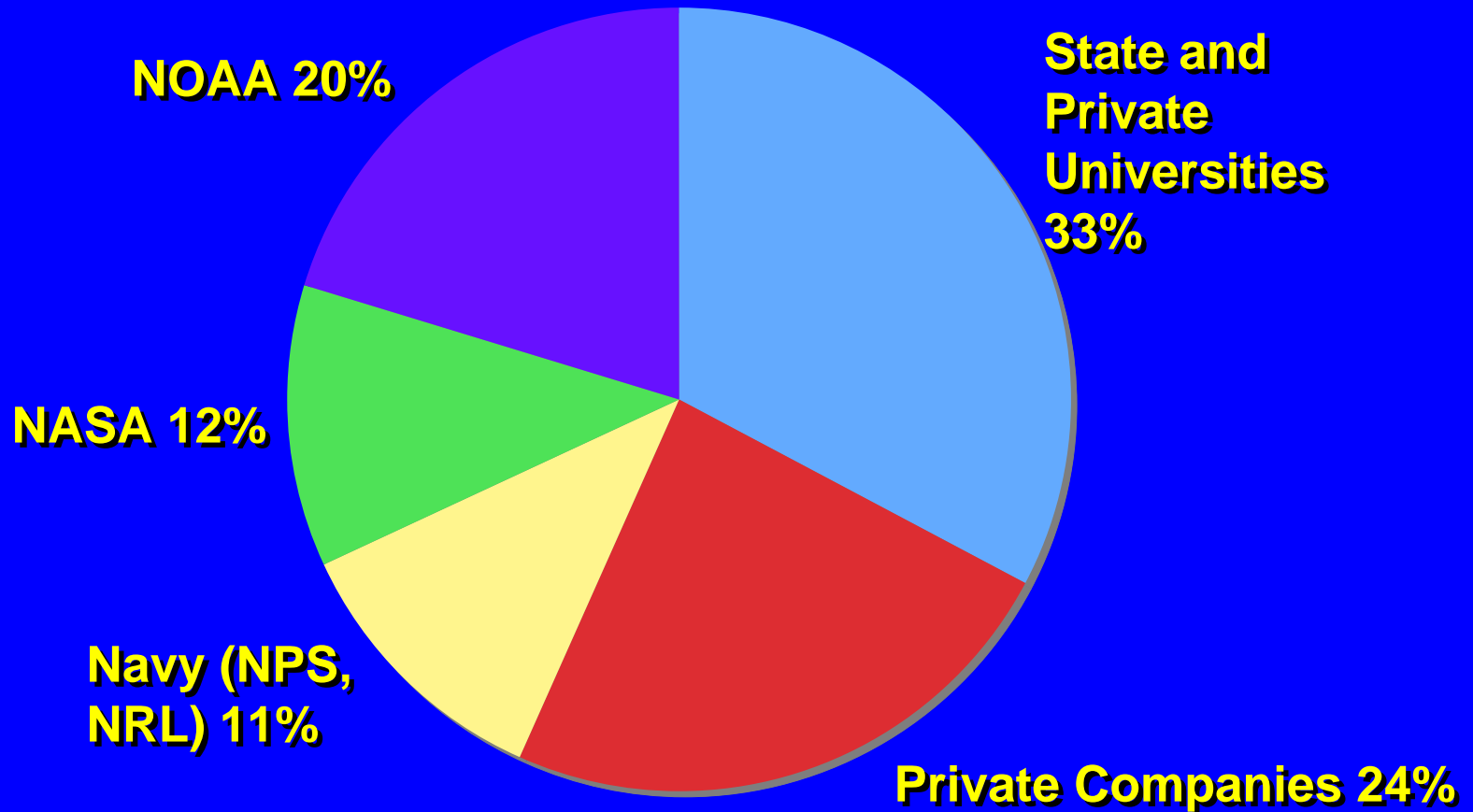


Status of 4th round (2007-2009) projects

- Application (28) Review completed in January 2007
- JHT & TPC Director sent recommendations (10 projects) to NOAA in early March 2007
- USWRP sent notifications to PIs on March 16
- Funding for NOAA PIs transferred in June 2007
- Funding for Navy and private PIs transferred in late September

4th Round (FY07) Recommended Funding Distribution

Total \$1.04M (\$1.5M announced)



4th Round Recommended Project Focus Areas

Primary Area of Focus	# of Projects
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
Total	10*

Challenges for FY08

- **Managing 10 projects with wide spread starting dates**
- **Review 4th round two-year projects for second year funding**
- **Preparation of the Announcement of Opportunity for the 5th round (FY09-10)**
- **Real-time Testing and evaluation**
- **Implementation of new projects (NHC)**
- **Future funding (FY09 -)**

Summary of JHT Activities 2001-2007

- **Total projects funded (round 1-4) – 50**
- **Number of projects completed (round 1-3) – 39**
(One was denied funding after first year)
- **Number of projects accepted for implementation – 28.5**
- **Number of completed projects not accepted – 4**
- **Number of completed projects pending further evaluation – 6.5**
- **Number of projects implemented – 25**

**Dedicated NHC & JHT staff, and close collaborations between the Pls,
NHC forecasters and support staff**

Acknowledgements

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

JHT Website

Go to 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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Questions?

Supplemental Slides

JHT Infrastructure

Personnel

- **Quarter-time Director (NOAA FTE)**
- **7-member Steering Committee**
 - Three from NOAA (one TPC), two from DOD, and two from the academic community
 - TPC member serves as co-Chair
- **Two quarter-time administrative assistants (NOAA FTE)**
- **One IT Facilitator**

Computing Resources

- **Server and workstations**
- **Software**

Factors Considered in TPC 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

JHT Fourth Round (FY07-08) Projects

Intensity, structure, and track projects

Proposal Title	PI	TPC POC
Improving the Hurricane WRF-Ocean Coupled System for Transition to Operations	Ginis, Isaac (Univ. of Rhode Island)	Pasch, Mainelli, Cangialosi Lozano/Tolman (EMC)
An Improved Wind Probability Estimation Program	Stan Kidder (CSU), DeMaria, Mark (NESDIS) Harr, Pat (NPS)	Knabb, Lauer, Mainelli
Hurricane Model Transitions to Operations at NCEP/EMC	Tuleya, Bob (SAIC)	Pasch, Fiorino, Rhome, Surgi (EMC)
Web-ATCF, user Requirements and Intensity Consensus	Sampson, Charles (NRL)	Knabb, Franklin, Sisko
Evaluation and Improvement of Ocean Model Parameterizations for NCEP Operations	Shay, Nick (UM)	Avila, Rhome, Baig, Lozano(EMC)

JHT Fourth Round (FY07-08) Projects

Intensity, structure, and track projects

Proposal Title	PI	TPC POC
Operational Use of Near-Real Time Surface Directional Wave Spectra Generated from NOAA Scanning Radar Altimeter Range Measurements	Walsh, Edward (NASA/GFSC)	Beven, Willis, Brown, Baig
High Wind Drag Coefficient and Sea Surface Roughness in Shallow Water	Powell, Mark (NOAA/AOML)	Franklin, Blake, Tolman (EMC)
Validation and Processing Tools for the AF Reserves Command 53rd Weather Reconnaissance Squadron WC-130J Multi-Aircraft SFMR Systems	J. Carswell (RSS, Inc.) P. Black (AOML)	Beven, Brown, Sisko, Christensen
Evaluation and Improvement of Spray-Modified Air-Sea Enthalpy and Momentum Flux Parameterizations for operational Hurricane Prediction	J. Bao, C. Fairall, J. Wilczak (ESRL)	Pasch, Berg, Fiorino, Surgi/Kwon (EMC)
TC Dressing: A Probabilistic Approach to Providing State Dependent, Non-Isotropic Forecast Track Error Guidance	J. Hansen J. Goerss (NRL)	Franklin, Blake, Sisko, Mundell