

66th Interdepartmental Hurricane Conference

**Tropical Cyclone Operations and Research:
Strength and Success Through Partnerships and Alliances**



Conference Wrap-Up

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Summary Wrap-Up

Significant Progress

A) Partnerships and Alliances

- **Established OFCM Interagency Infrastructure;**
 - **produced common set of R&D priorities**
matched to ops requirements (JAG/TCR – WG/TCR)
 - **increased cooperative operational efforts**
 - **assisted in focused efforts for system upgrades**
- **Established structure for productive Partnerships & Alliances**
 - **absolutely vital as downward budget pressure hits agency core mission areas**

Summary Wrap-Up

Significant Progress

B) Track Forecast Continues to Improve [2011 reduction of 5-10% in track error]

- Model improvements / ensemble output**
- Assimilation of aircraft radar & satellite MW data**
- Implementation of JHT results**

C) Joint Hurricane Testbed (JHT) – improving R2O

- 50% success rate 35 of 74 moved to operations
[25 @ NHC & 10 @ EMC/NCEP]**

Summary Wrap-Up

Significant Progress

D) Increased Exploitation of Research Systems for Ops

- NASA satellite data available in Near Real-Time**
- NRL Tropical Cyclone Satellite Web Page**

E) Research Results Showing the Way Forward

- Intensity Improvements 10-20% 2-5 days**
- Improved Rapid Intensification Identification
(10-20%+ > use of Ensemble & MW data)**
- > Use of sat MW data important for improvements**

Summary Wrap-Up

Significant Progress

- F) HFIP – Successfully providing framework to focus efforts & accelerate progress**
 - Infrastructure allows rapid T&E of new discoveries & obs (R20)**

- G) Technology Innovation Showing Results**
 - Potential for Ops UAS dropsondes**

- H) Focus on Storm Surge providing Improvements**
 - Ensemble approach**
 - Improved display products**
 - > coordination among agencies (+ social sciences)**
 - Added focus on feedback from EM & Public**

Summary Wrap-Up

Significant Challenge Areas/Gaps Remain

A) Intensity and Rapid Intensification Forecasts still need significant improvement

- > **initialization improvements** (data assimilation)
- > **ensemble research** (~ physics)
- > **focus on moisture/wind integration into models**
(improved techniques & added data e.g., COSMIC & MW data)
- > **predictive capability from models**

B) Uncertainty in future Satellite MW resources

Summary Wrap-Up

Significant Challenge Areas/Gaps Remain

C) Message/Warning to Decision Makers & Public still not sufficient for all desired actions

(Social Science focus issues)

-- Form/format issues remain

- advances in tailoring for DM (USN) needs expansion

-- Communications channels need to be optimized

(Are we addressing social media well enough?)

-- Infrastructure issues need further efforts (bldg codes etc.,)

Summary Wrap-Up

Follow-Up Actions to be Developed

[Early ones indicated below]

Early actions for WG/TCR:

- Define future sat MW availability**
- Define how TCR can be integral to**
 - USN ESPC investment areas**
 - NSF broad university ensemble activity**
[e.g., virtual field campaign, etc.,]
- Define the areas needing greater feedback**

Summary Wrap-Up

We have shown significant successes and an excellent start on “the way forward” with our focused research; however, future agency budget issues will require continued emphasis on our partnerships and alliances.

We have great people, structure, and plans – thanks to all of you for contributing as success breeds success!