

Update on the NHC and Pacific Region Proving Ground Activity

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NOAA/NESDIS/STAR

Proving Ground All Hands
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2011 NHC Proving Ground

- Aug. 1-Nov. 30th
- 9 products being demonstrated
- Mid-Year project review at NHC Sept 13th
 - NHC – M. Brennan, J. Beven, E. Blake, H. Cobb
 - NESDIS – M. DeMaria
 - CIRA – A. Schumacher
 - HRD/CIMAS – J. Dunion
 - GOES Program Office – Bonnie Reed

2011 NHC Proving Ground Products

- **Baseline**
 - Hurricane Intensity Estimate (HIE) from CIMSS
 - Super Rapid Scan Imagery coordinated by CIRA and NHC
- **Future Applications (formerly known as Option 2)**
 - Tropical Overshooting Top (TOT) Detection Algorithm from CIMSS **(new in 2011)**
- **Additional Future Applications from GOES-R Risk Reduction**
 - Red-Green-Blue (RGB) Air Mass Product from CIRA/SPoRT
 - RGB Dust Product from CIRA/SPoRT
 - Saharan Air Layer (SAL) Product from CIMSS
 - GOES-R Natural Color Imagery from CIRA **(new)**
 - Pseudo Natural Color Imagery from CIMSS **(new)**
 - Lightning based Rapid Intensification Index (RII) from CIRA

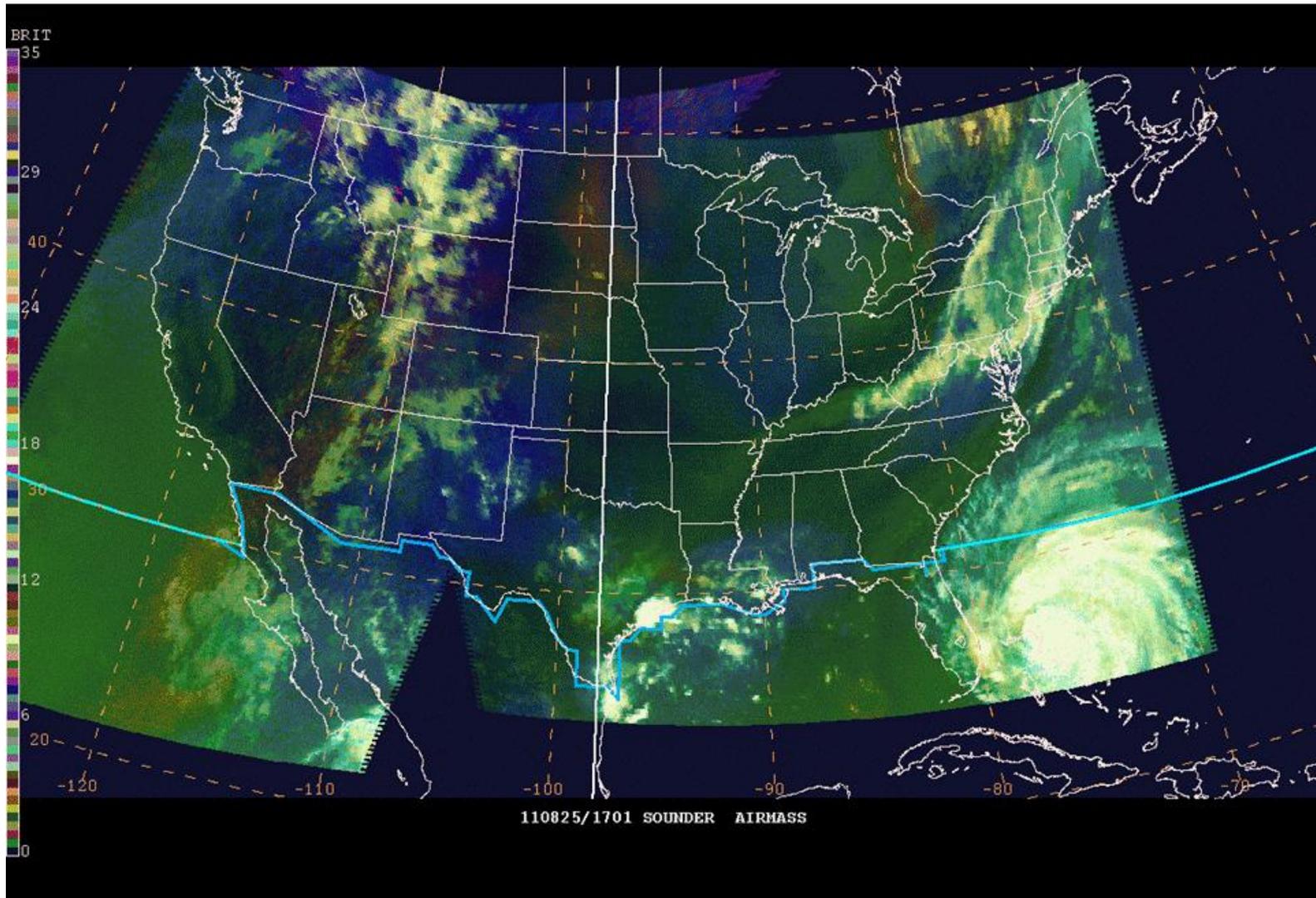
NHC Proving Ground Highlights

- HIE used to upgrade TD12 to Katia
- Super Rapid Scan GOES-West data used to reposition tropical storm Nate at sunrise
- SPoRT-CIRA collaboration resulted in RGB Air Mass and Dust products available in NHC N-AWIPS
- GOES sounder air mass product useful for ET transition of Irene and Lee, SEVIRI version for ET transition of Katia
- Michael Folmer assisting with RGB air mass analysis and archive
- Dust product useful for initial formation of Hurricane Irene
- NHC obtained real time Vaisala GLD360 lightning data
 - Complements Proving Ground experimental rapid intensity change index

Hurricane Specialist Eric Blake demonstrating N-AWIPS Air Mass Product in NHC Operations Area



Sounder Air Mass Product for Irene



Accomplishments since Mid-Project Review

- CIMSS provided NHC with missing Katia HIE estimates for post season evaluation
- Web page set up for SRSO cases
 - <http://rammb.cira.colostate.edu/products/srso/>
- GOES-R natural color algorithm modified by CIRA to reduce green bias seen during NHC Proving Ground
- Domain of CIMSS tropical overshooting page extended to include GOES-East
 - Response to feedback at mid-project review
- J. Beven gave NHC Proving Ground presentation at the GOES Users Conference
- Poster submitted to AMS tropical conference on NHC Proving Ground

New Domain of CIMSS Tropical Overshooting Tops Product



GOES-R Proving Ground Product Demonstration: Meteosat Overshooting Tops and Atlantic TC Genesis



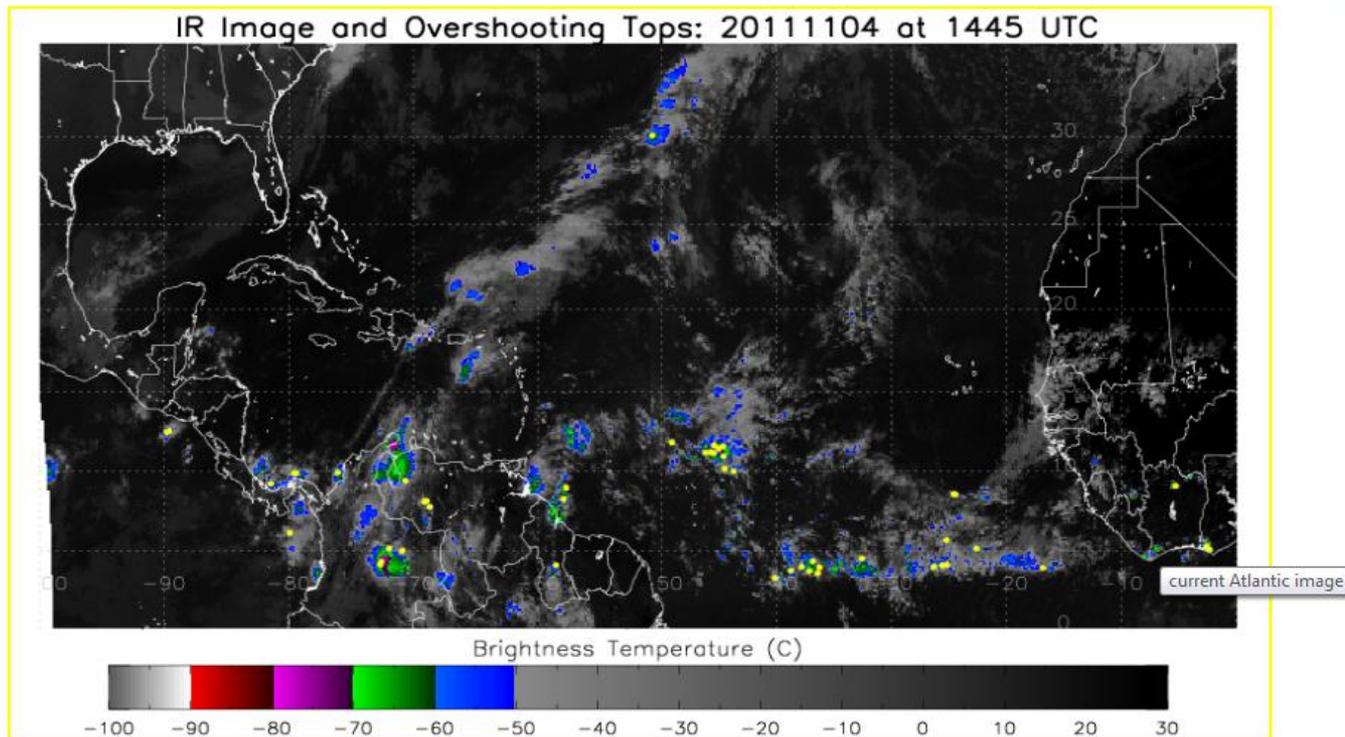
Product Developers: Sarah Monette and Chris Velden

OT Algorithm Developers: Kristopher Bedka, Wayne Feltz, and Jason Brunner

Past
2011
TCs

[KATIA](#)
[MARIA](#)
[OPHELIA](#)
[PHILIPPE](#)
[RINA](#)

Current image of the Atlantic Ocean. Yellow dots represent the location of tropical overshooting tops (TOTs).



[3-hr Animation of the above image](#)

[Text of OT locations](#)

For 15 minute temporal resolution:

[CONUS](#)

[METEOSAT](#)

Next Steps for NHC Proving Ground

- Nov. 30th – 2011 Project Ends
- Post season quantitative evaluation of HIE and Lightning-Based Rapid Intensity Change Index
- Early 2012 - Preparation of final report
- March 2012 – Presentation on 2011 Proving Ground at the Interdepartmental Hurricane Conference
- Spring/Summer 2012 – Preparation for 2012 NHC Proving Ground

Pacific Region Proving Ground

Probable Participants

- Pacific Region
 - Bill Ward
- Honolulu WFO
 - Derek Wroe, Robert Ballard
- Guam WFO
 - Roger Edson
- JTWC
 - Ed Fukada, James Darlow, Matthew Kucas
- U. Hawaii
 - Steve Businger, Post Doc*
 - Official offer made to UH Post Doc, but not on board yet
- CIRA/RAMMB
 - Mark DeMaria, John Knaff, Steve Miller, Andrea Schumacher
- CIMSS/ASPB
 - Wayne Feltz, Mike Pavolonis, Jordan Gerth
- SPoRT
 - TBD

WFO/JTWC/UH/NESDIS Meeting

13 Sept 2011

- Product candidate list discussed
 - UW Convective initiation, Lightning Detection, Lightning/Rainfall rate, Lightning based rapid intensity change, Volcanic ash, SO₂, Baseline QPE, Orographic rain index, TPW, Atmospheric Rivers, Basic MODIS products from SPoRT
- Various levels of product maturity
- Wide range of delivery methods
- Training needed on most products
- Many technical issues
 - Use of local ingest systems, AWIPS-II for JTWC?, etc

Suggested Next Steps for PAC Proving Ground

- Next 2 weeks
 - Revisit project outline (M. DeMaria, S. Businger, W. Feltz, SPoRT rep)
- Before end of calendar year
 - Develop operations plan to select product subset and clarify time lines (Coordinated by B. Reed)
- Science committee needs to be finalized