



2nd Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS) Applications Workshop

February 19-20, 2020
Rosenstiel School of Marine & Atmospheric
Science Auditorium, University of Miami
4600 Rickenbacker Causeway, Miami, FL 33149-1031

Meeting Access for Remote Participants:
<https://www2.gotomeeting.com/join/151354330>

Tuesday, February 18:

6:00p – 7:30p Optional Cocktail Hour at [Above Mayfair](#)

Wednesday, February 19:

7:15a UM shuttle departs [Mayfair Hotel & Spa](#) for UM/RSMAS
7:30a – 8:00a Registration/Light Refreshments
8:00a - 8:05a Welcome and Logistics, **Jason Dunion**, Univ. of Miami/CIMAS –
NOAA/AOML/HRD
8:05a – 8:10a UM Welcome, **Benjamin Kirtman**, Director, Univ. of Miami-
CIMAS
8:10a – 8:15a Summary of Workshop Objectives, **Emily Berndt**,
Deputy Program Applications Lead TROPICS, NASA/MSFC
8:15a – 8:30a NASA HQ and Applied Sciences Welcome, **John Murray**,
Associate Program Manager, Disasters, NASA Applied Sciences
8:30a – 9:00a *TROPICS Mission Overview and Status*, **William Blackwell**,
TROPICS Principal Investigator, MIT Lincoln Laboratory

Proxy Data Presentations: (Session Chair: William Blackwell)

9:00a – 9:15a *Hurricane Nature Run*, **Vince Leslie**, MIT Lincoln Laboratory
9:15a – 9:30a *Impact of passive MW data in the ECMWF system and experience
with MWHS-2*, **Niels Bormann**, ECMWF
9:30a - 9:45a *Exploring TC Structure and Rainfall with TROPICS Proxy Data*,
Erin Munsell, NASA GSFC/UMD
9:45a - 10:00a *Analysis of the Tropical Cyclone Diurnal Cycle using TROPICS
Proxy Data*, **Erika Duran**, UAH/NASA SPoRT
10:00a – 10:15a Morning Break (registration payment desk will be open)

Application Presentations 1: TC Analysis and Forecasting

(Session Chair: Jason Dunion)

- 10:15a – 10:30a *NHC Perspective, **Jack Beven**, NOAA/National Hurricane Center*
10:30a – 10:45a *JTWC Perspective, **James Darlow**, Joint Typhoon Warning Center*
10:45a – 11:00a *HRD Perspective, **Hui Christopherson**, Univ. of Miami/CIMAS – NOAA/AOML/HRD*
- 11:00a – 11:15a *Level 2 TROPICS Tropical Cyclone Intensity Products, **Derrick Herndon**, UW-Madison/CIMSS*
- 11:15a – 11:30a *Using machine learning of TC structures for rapid intensification forecasting, **Hui Su**, Jet Propulsion Laboratory*
- 11:30a – 12:30p Lunch at RSMAS Commons: [SALT Waterfront Restaurant](#)

Application Presentations 2: Terrestrial/Disasters/Severe Weather

(Session Chair: Daniel Vila)

- 12:30p – 12:45p *TROPICS Precipitation Products, **Chris Kidd**, NASA GSFC/UMD*
- 12:45p – 1:00p *NASA Disasters Overview, **Andrew Molthan**, NASA MSFC*
- 1:00p – 1:15p *TROPICS – Potential for a Step-Change in Operational Hydrology, **Ana Barros**, Duke University*
- 1:15p – 1:30p *MCS Tracking and Nowcasting, **Daniel Vila**, Centro de Previsão de Tempo e Estudos Climáticos (CPTEC)/INPE*
- 1:30p – 1:45p *How Do TROPICS Frequencies Respond to Large Hail, **Dan Cecil** (NASA MSFC) & **Sarah Bang** (NASA NPP)*
- 1:45p – 2:00p *Improving Precipitation Retrieval with Brightness Temperature Temporal Variation: Add a Time Dimension, **Yalei You**, UMD*
- 2:00p – 2:15p Afternoon Break

Breakout Discussions/Capture End User Perspectives

- 2:15p – 2:30p Update on Mission Latency, **William Blackwell**, MIT Lincoln Laboratory
- 2:30p – 3:15p Breakout Discussions #1 Latency (led by session chairs; local scribes)
1. Terrestrial/Disasters/Severe Weather
 2. Tropical Cyclone Analysis/Forecasting
 3. Tropical Cyclone Modeling and Data Assimilation
- 3:15p – 3:45p Breakout Leads Report Out (10 minutes each)
- 3:45p – 4:30p Breakout Discussions #2 Products, Visualization, new tools, needs (led by session chairs; local scribes)
1. Terrestrial/Disasters/Severe Weather
 2. Tropical Cyclone Analysis/Forecasting
 3. Tropical Cyclone Modeling and Data Assimilation

4:30p – 5:00p	Breakout Leads Report Out (10 minutes each)
5:00p – 5:15p	Wrap up for the day
5:15 – 6:15p	Optional Ice Breaker: RSMAS Commons
6:30p	UM shuttle departs UM/RSMAS for Mayfair Hotel & Spa

Thursday, February 20:

7:15a	UM shuttle departs Mayfair Hotel & Spa for UM/RSMAS
7:30a – 8:00a	Registration/Light Refreshments

Application Presentations 3: Tropical Cyclone Modeling and Data Assimilation (Session Chair: **Scott Braun**)

8:00a – 8:15a	<i>Tropical modeling activities at Météo-France and potential applications of TROPICS data, Philippe Chambon, Météo-France</i>
8:15a – 8:30a	<i>NOAA's Hurricane Modeling and Data Assimilation Efforts Under the Unified Forecast System Framework, Xuejin Zhang, NOAA/AOML/HRD</i>
8:30a – 8:45a	<i>All-Sky radiance assimilation for COAMPS-TC at NRL, Allen Zhao, NRL Monterey</i>
8:45a – 9:00a	<i>Impact of satellite microwave radiance data assimilation on GEOS atmospheric analysis and forecasts in Tropics, Min-Jeong Kim, NASA GSFC/GMAO</i>
9:00a – 9:15a	<i>Assimilation of satellite radiances and retrieved data products for improved numerical prediction of tropical cyclones: Promises, challenges, and trade-offs, Zhaoxia Pu, University of Utah</i>

Breakout Discussions/Capture End User Perspectives

9:15a – 9:30a	<i>Challenges with SmallSats, Kevin Garrett, NOAA NESDIS</i>
9:30a – 10:15a	Breakout Discussions #3 potential strengths & limitations of integrating smallsats in research and applications (led by session chairs; local scribes) <ol style="list-style-type: none"> 1. Terrestrial/Disasters/Severe Weather 2. Tropical Cyclone Analysis/Forecasting 3. Tropical Cyclone Modeling and Data Assimilation
10:15a – 10:45a	Breakout Leads Report Out (10 minutes each)
10:45a - 11:00a	Morning Break (registration payment desk will be open)

Synergy with other Missions: (Session Chair: Patrick Duran)

- 11:00a – 11:15a *Optimizing the Utilization of CYGNSS Wind Observations for Numerical Prediction of Tropical Cyclones*, **Bachir Annane**, University of Miami/CIMAS – NOAA/AOML/HRD
- 11:15a - 11:30a *Application synergy with JPSS and TROPICS*, **Mitch Goldberg**, NOAA JPSS
- 11:30a – 11:45a *GOES-R ABI Applications to Hurricanes*, **Jason Dunion**, Univ. of Miami/CIMAS – NOAA/AOML/HRD & **Chris Velden**, UW Madison-CIMSS
- 11:45a – 12:00a *GOES-R GLM*, **Stephanie Stevenson**, CIRA/Colorado State University - NOAA/National Hurricane Center
- 12:00a – 12:15p *Hurricane Intensity and the PMW Constellation*, **Derrick Herndon**, UW-Madison/CIMSS
- 12:15p – 12:30p Workshop Final Thoughts /Adjourn Meeting**
- 12:45p UM shuttle departs UM/RSMAS for [Mayfair Hotel & Spa](#)
- 1:30p – 3:30p Closed door TROPICS Science Team Meeting: [CIMAS Conference Room](#)
- 3:45p UM shuttle departs UM/RSMAS for [Mayfair Hotel & Spa](#)