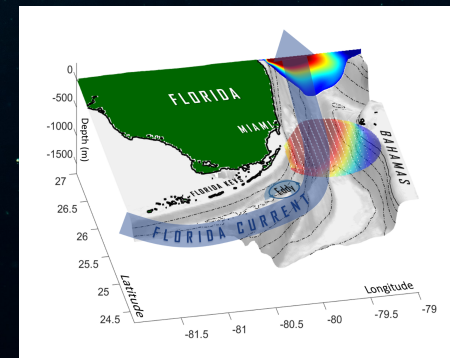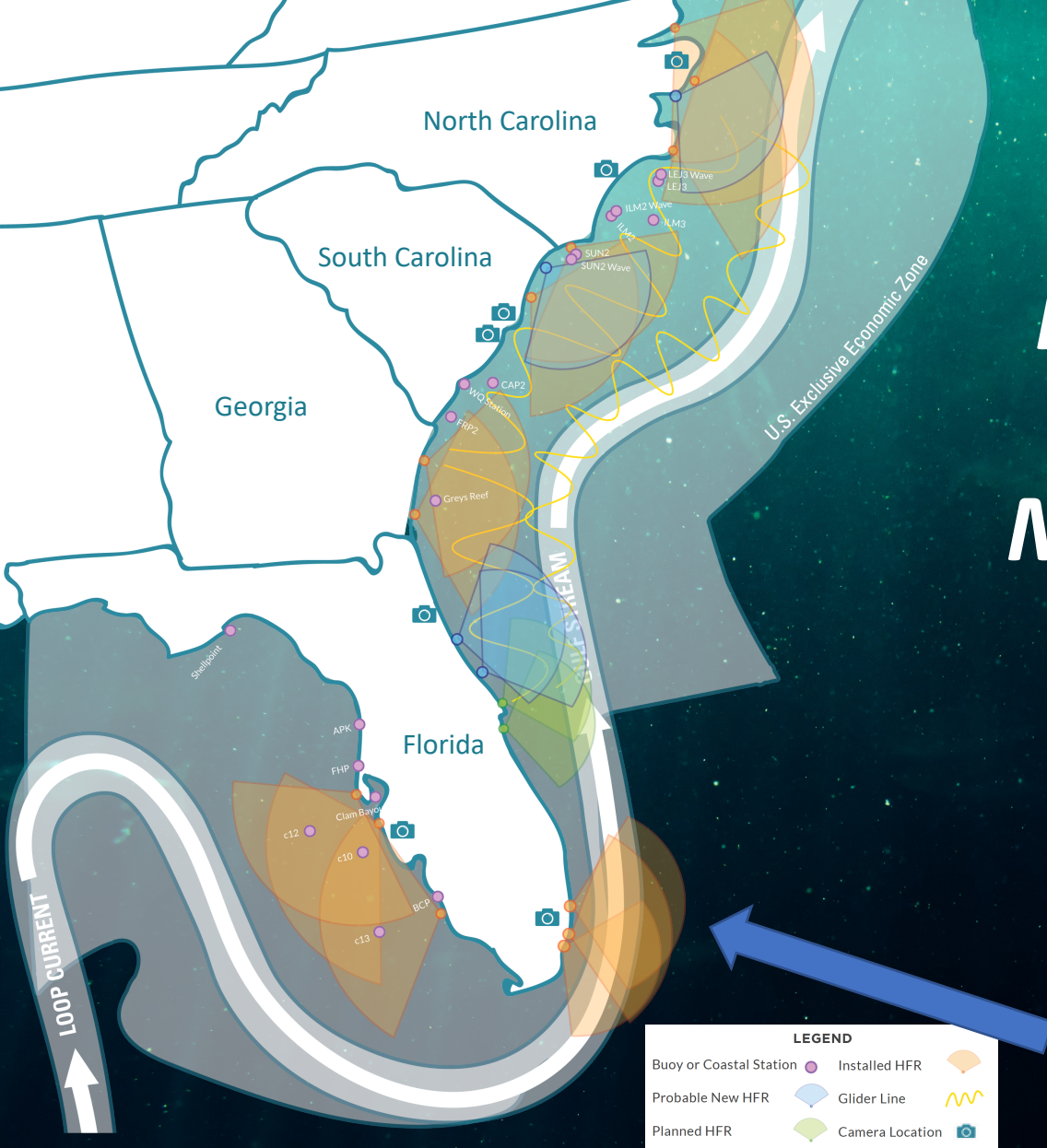# *HF Radar and Michael Measurements*

Nick Shay

UM/RSMAS/UODL

Objectives and Approach

Objectives:

- Operate WERA (Phased Array) sites to maximize uptime and spatial coverage;
- Provide radial velocities to National Network;
- Collaborate with SECOORA region HF Radar operators to:
    a. standardize operations and data delivery,
    b. provide uptime and spatial metrics, and,
    c. archive and manage data;
- Foster integration with other SECOORA subsystem projects; and
- Enhance utilization of the data by stakeholders (e.g., CESU, ACOE, MSC).

Approach: (Marine Ops/Hazards)

- Operate and Maintain HF Radar Sites in Dania Beach, Virginia Key, Crandon Park and Key Largo.
- TX at 12.7 and 13.5 MHz with 16-element RX elements.
- Quality control radial current data and average over hourly intervals subsampling to a 2.2 km grid (98%).
- Upload real time data to RSMAS website using all sites to estimate the 2-D current field.
- Estimate significant wave heights from 2nd order returns.
- Combining Surface Velocity/SST Images to Assess Warming and Sea Level.

Plans / Impacts

- Operating Dania Beach-Uptime 98% of the time.
- Negotiating NKL site with DEP/NEPA successful!
- Providing Assistance to FIT on their WERA Deployments.
- Working with PORTS to Install VHF Radars to resolve Currents/Waves.
- Establishing a 5th Site across the FS with sea level/met station- King Tide/Flooding on Miami Beach.
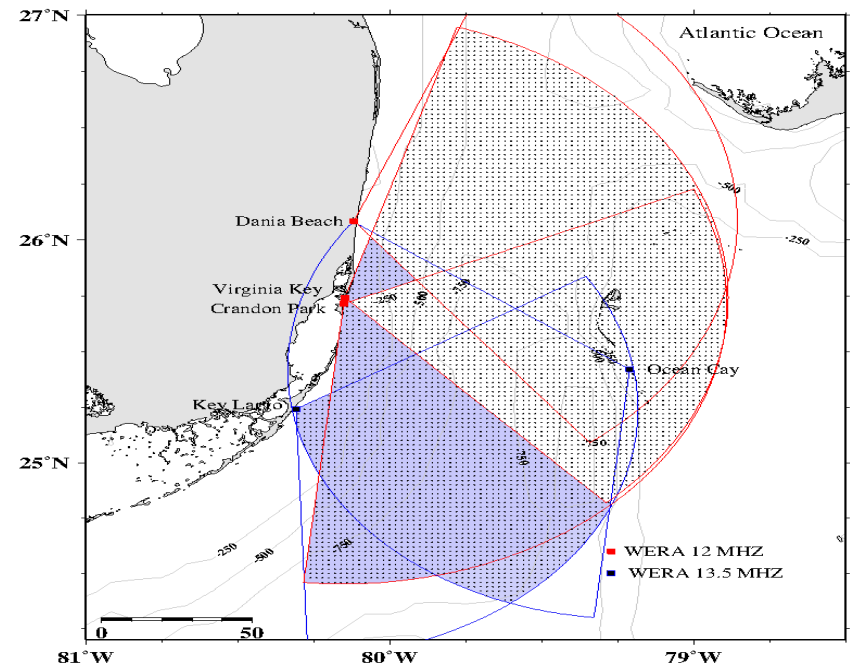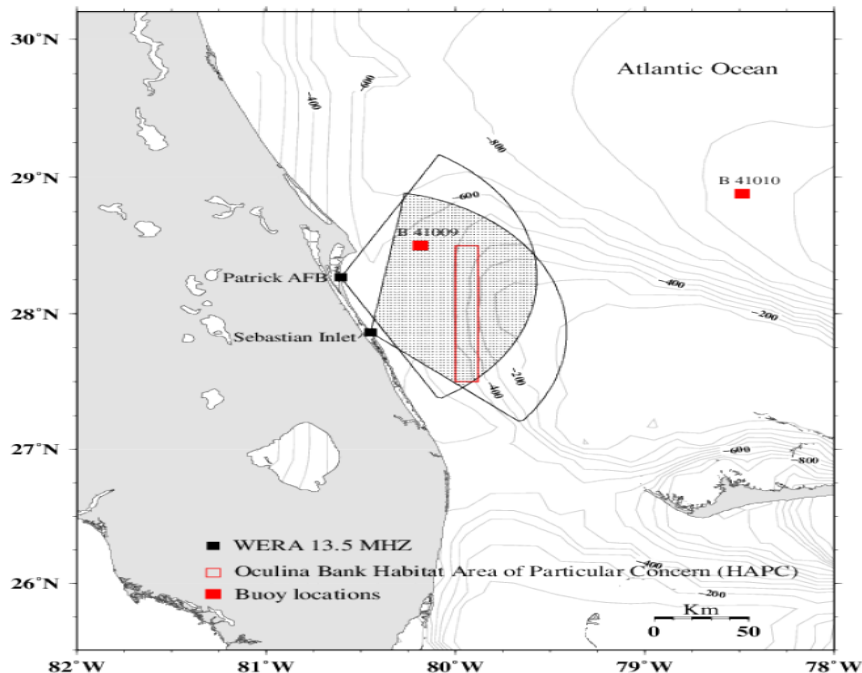
Michael (NOAA WP-3/USAF WC-130J)
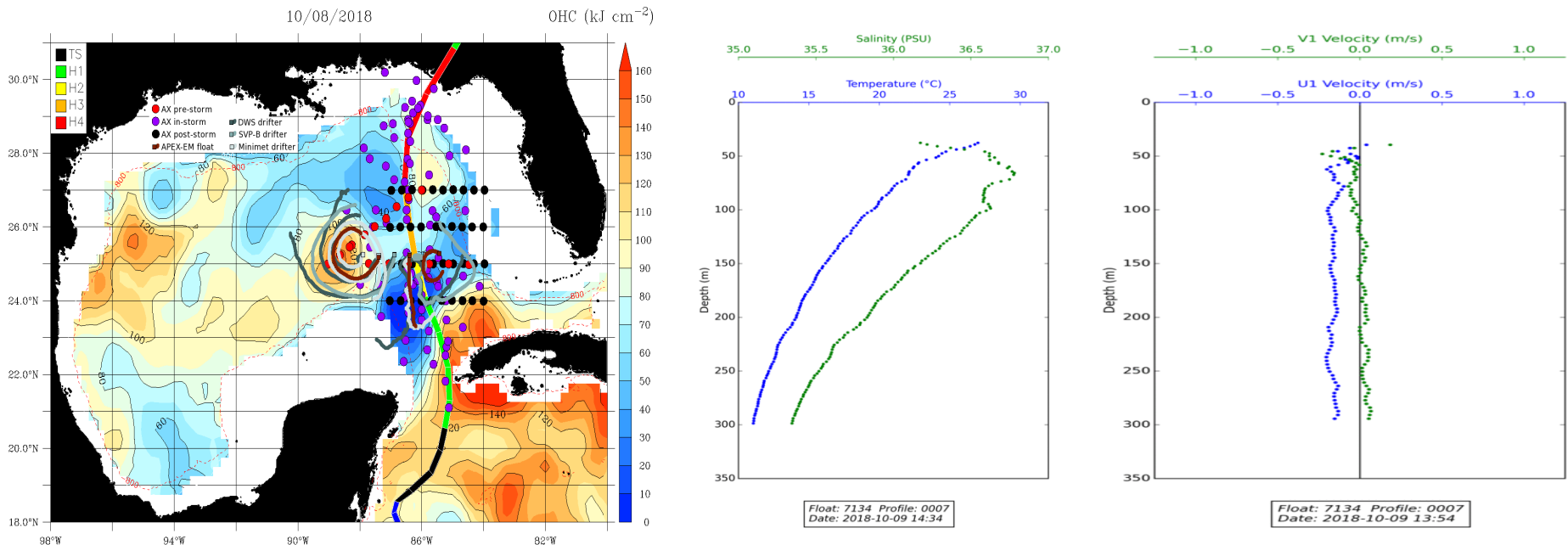
APEX-EM Float ID	Pre-storm	In-storm	Post-storm	Total
7133	6	116	90	212
7134	6	119	105	230
7135	6	121	99	226
Total	**18**	**356**	**294**	**668**

- Landmark ocean dataset to initialize and evaluate numerical model performance.

- Strong salinity stratification over the upper ocean/limited ocean cooling.

- Energetic near-inertial current response-strong shear (mixing schemes)