



# The CARICOOS Wave Model v7.0

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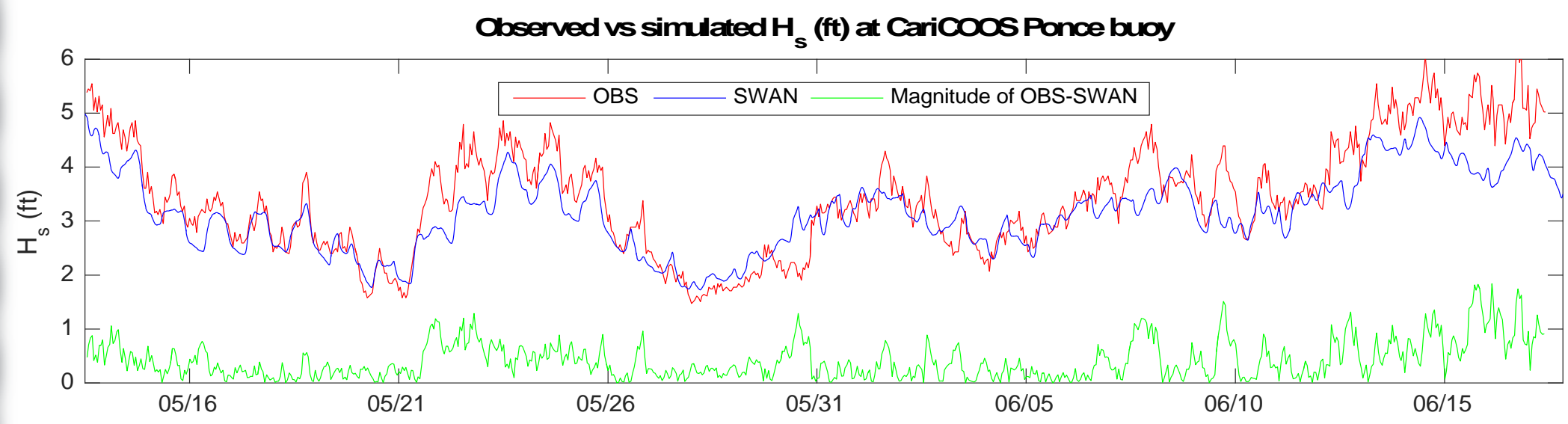
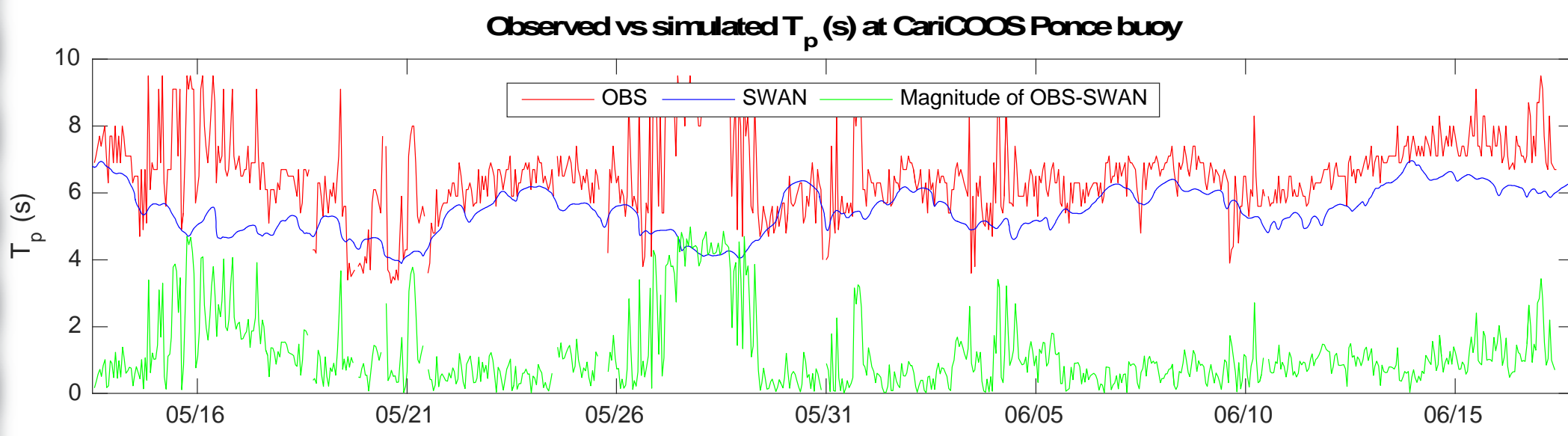
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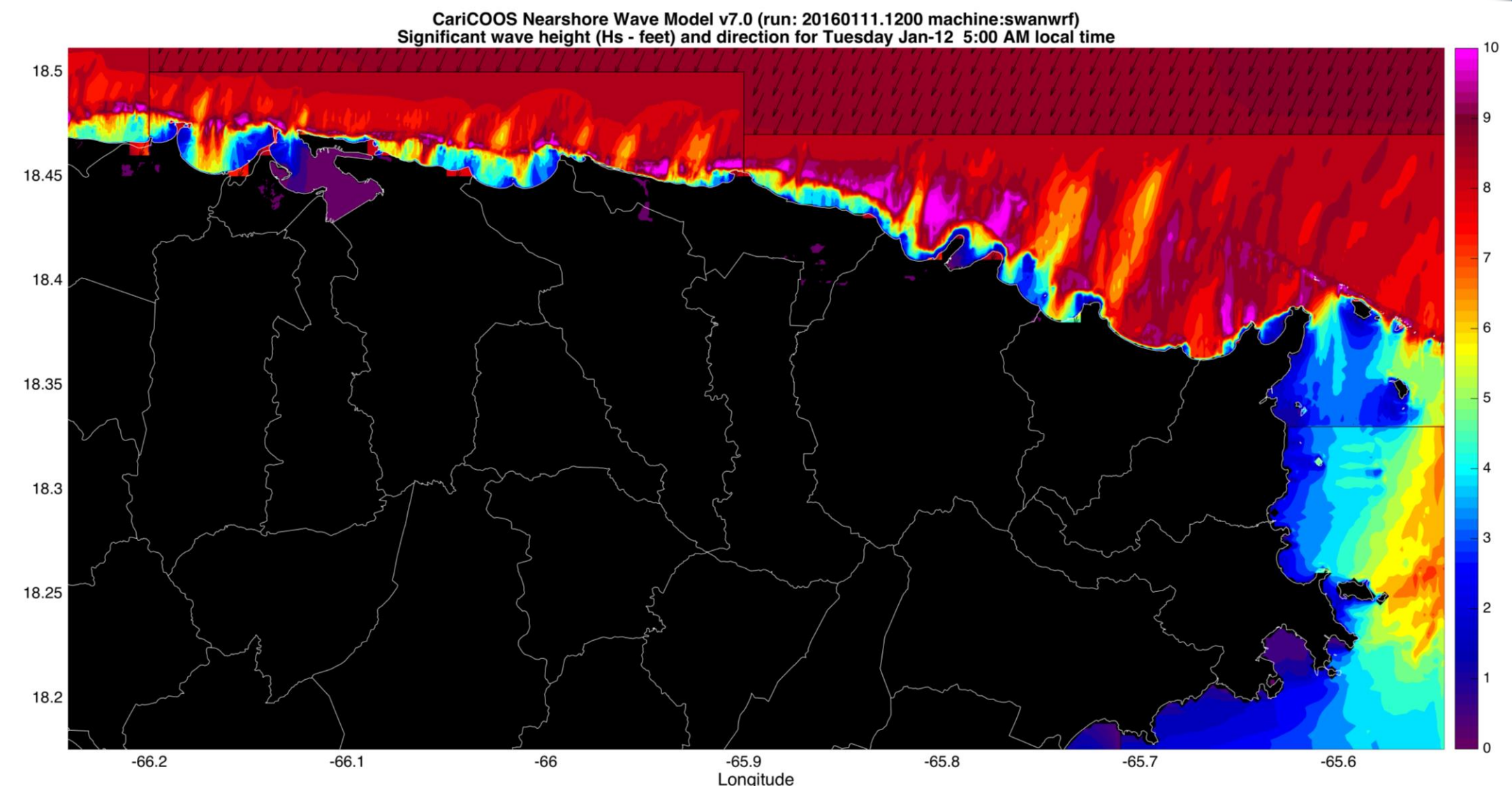
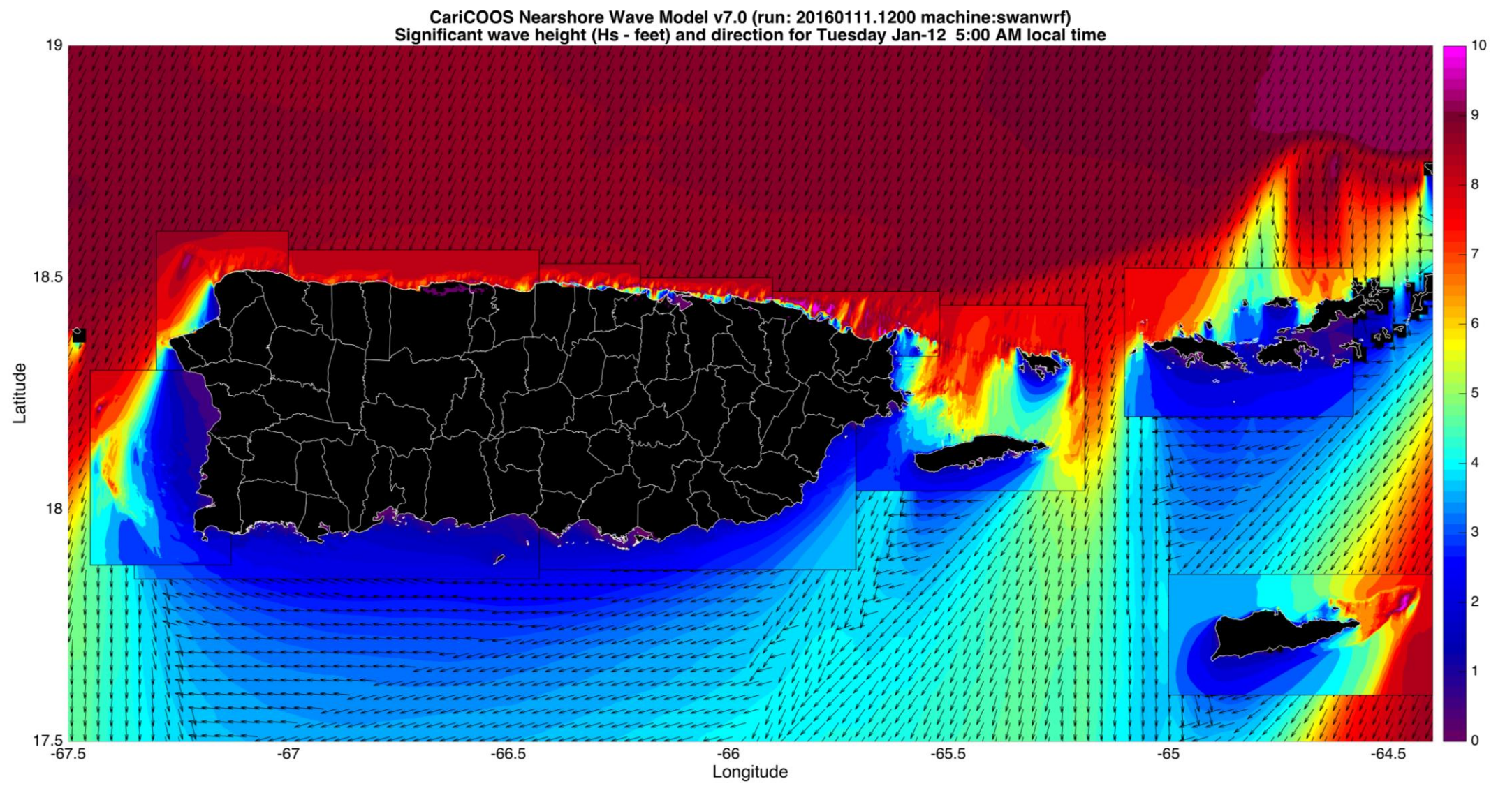
The CARICOOS Wave Model is an operational wave model with nested grids at a spatial resolution ranging from 1.1 km to 60 meters. An evaluation of model performance in the nearshore region under extreme wave forcing in FY 14 showed good agreement with observations. Improvement to the CWM in FY15 include:

- Operational implementation of WRF 2KM wind forcing
- Improvements to spectral grid discretization (see table below)
- Improvements in graphical output, including 2D and 1D spectral plots for over 200 forecast points

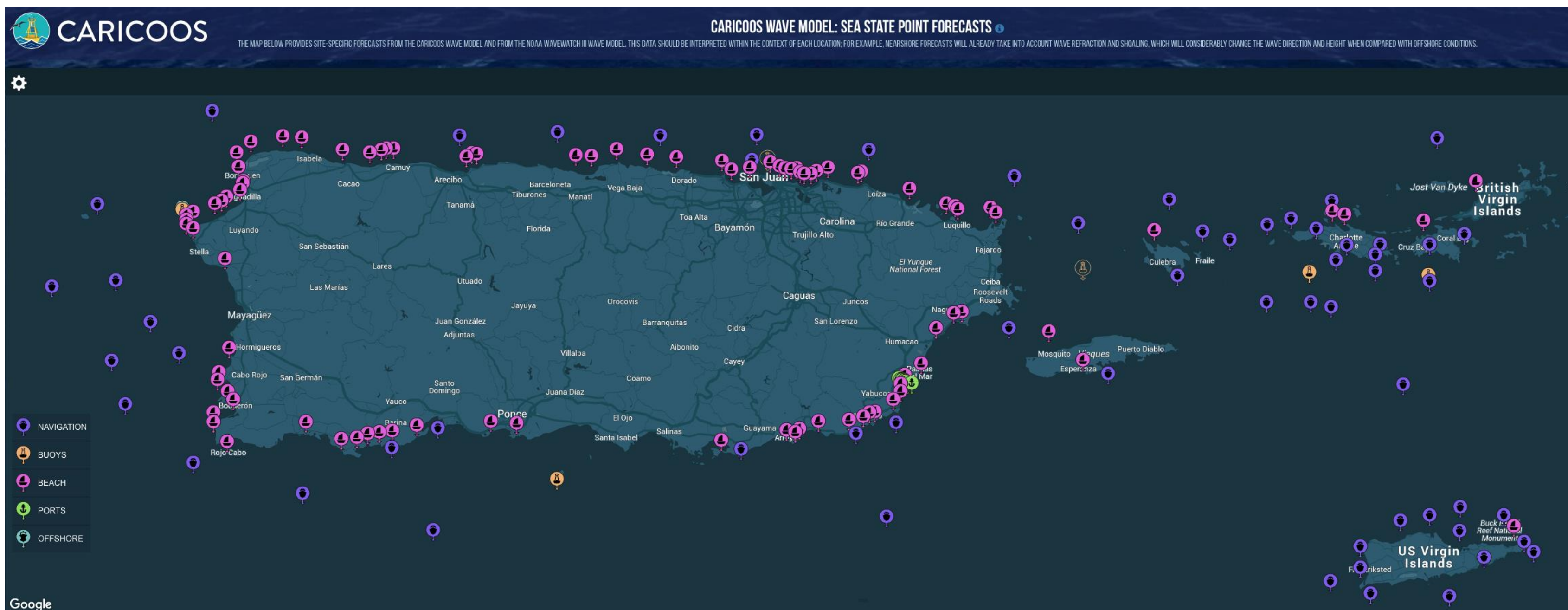
Time step	Frequency bins	$f_{max}$	$f_{min}$	Directional resolution
30 min	36	1 Hz ( $T = 1s$ )	0.0455 Hz ( $T = 22s$ )	10 degrees (36 bins)



[Above] SWAN Model validation with Ponce buoy to quantify model performance in wind-dominated sea states with 2 km WRF surface boundary conditions.

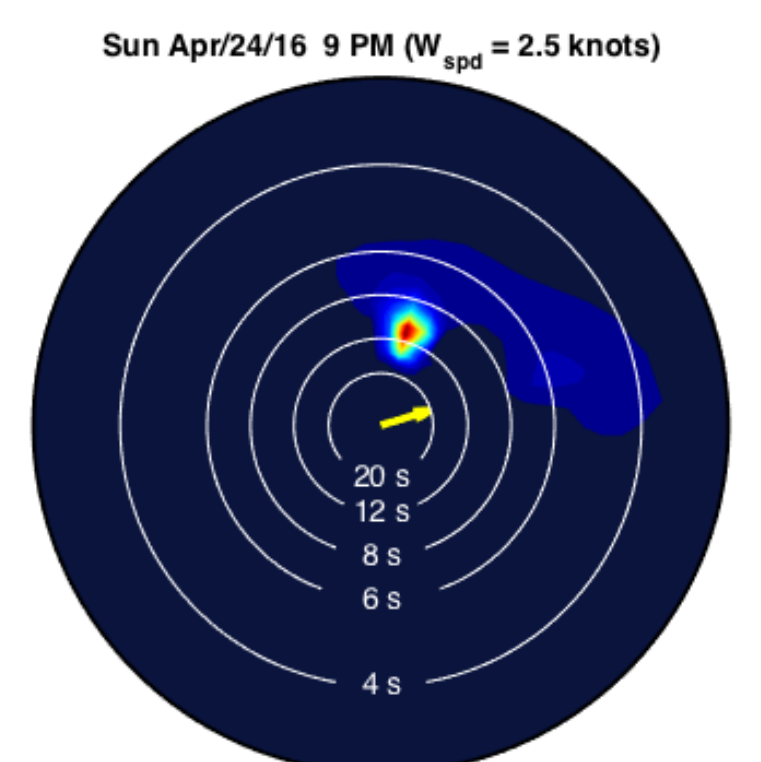
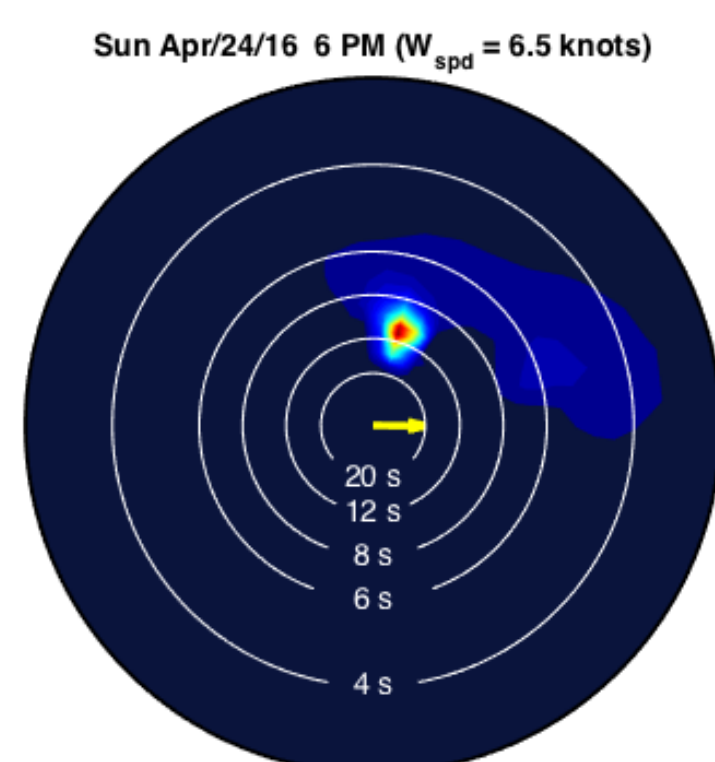
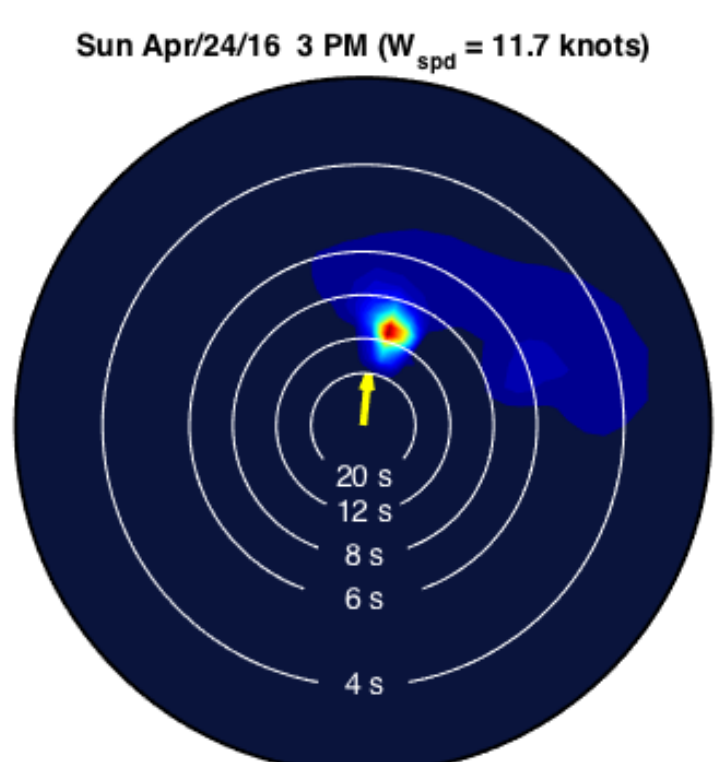
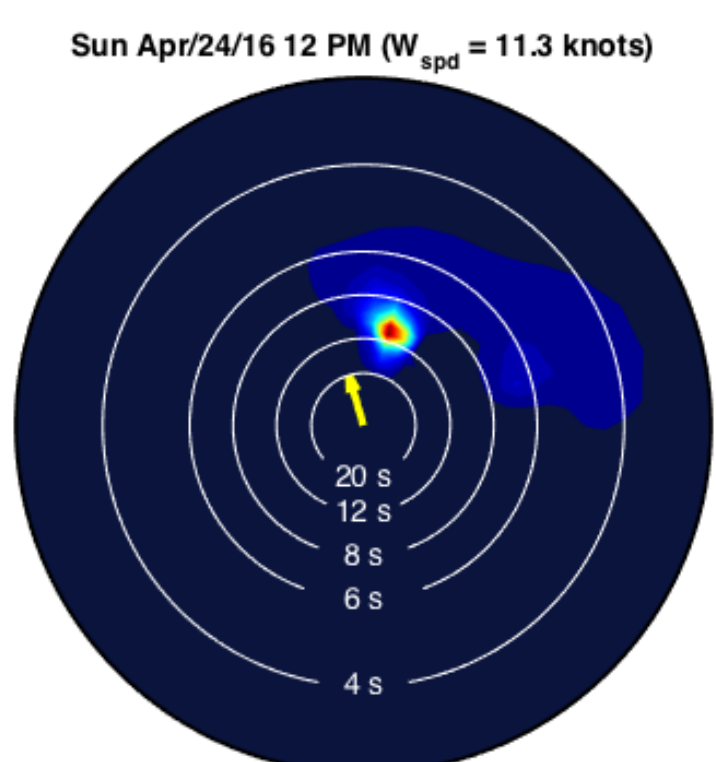


[Above] The high-resolution grids and new spectral discretization allow for improved representation of the wave field in the nearshore region.

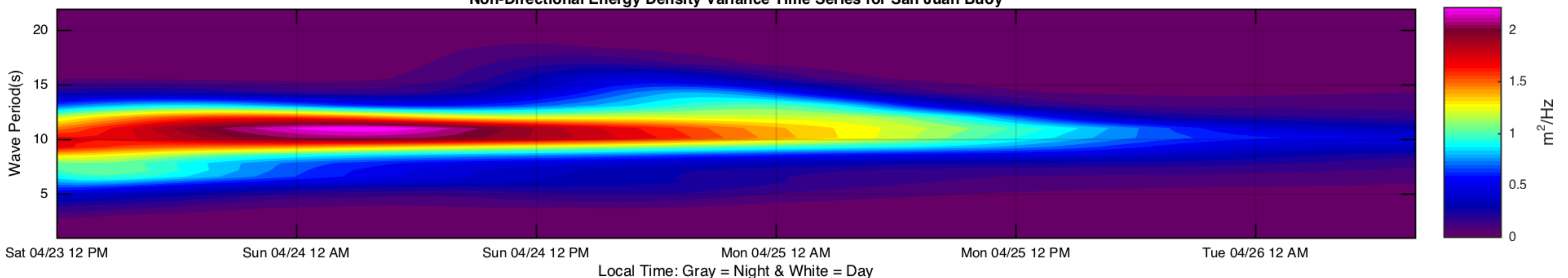


[Left] In response to stakeholder needs we provide over 200 point forecasts within the CariCOOS Nearshore Wave Model. Please let us know if you are interested in a free custom point forecast for the location of your choosing.

[Below] 2D and 1D spectral plots are produced at every forecast point.



Non-Directional Energy Density Variance Time Series for San Juan Buoy



THE FUTURE: 2D spectral partitioning, unstructured SWAN, wind and wave forecasts along custom boating lanes, and more...