



CARICOOS

Measuring Waves with High Frequency Radar

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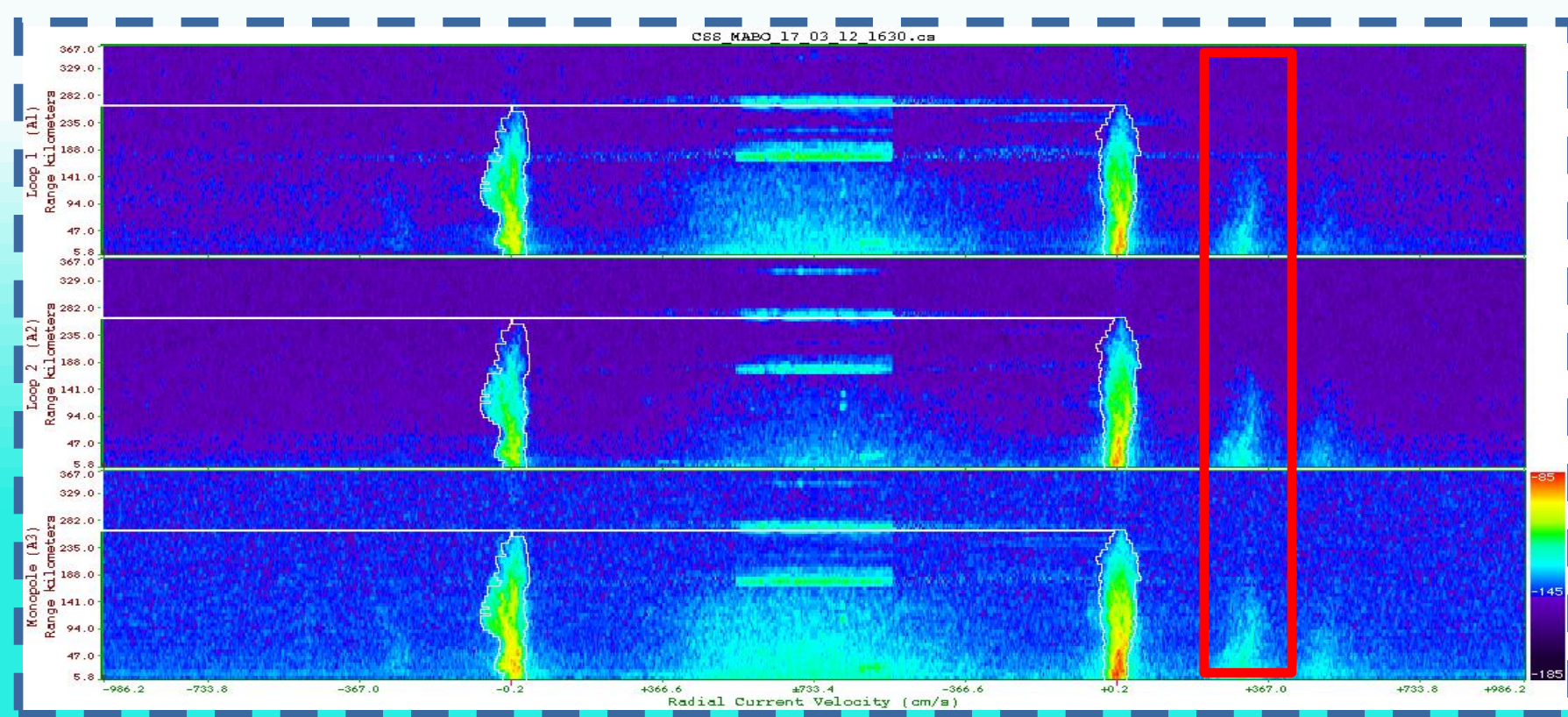
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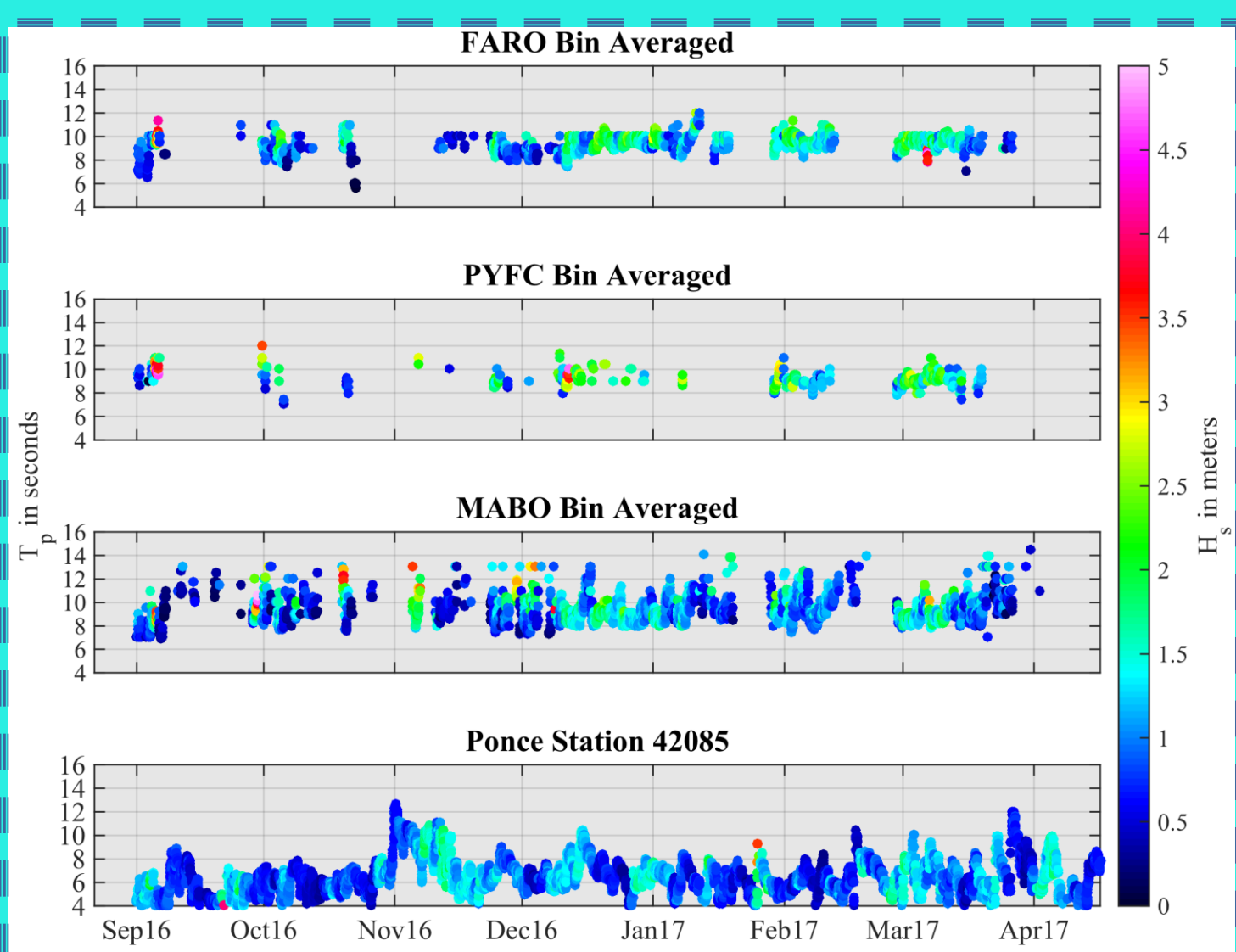
CODAR, or Coastal Ocean Dynamics Applications Radar, uses high-frequency radio waves to determine various ocean parameters such as surface currents and wave height, period, and direction. Although CODAR is particularly useful for current mapping, the ability of the radar to measure ocean wave parameters has potential to be utilized in real time operations.

5MHz Wave Measurements

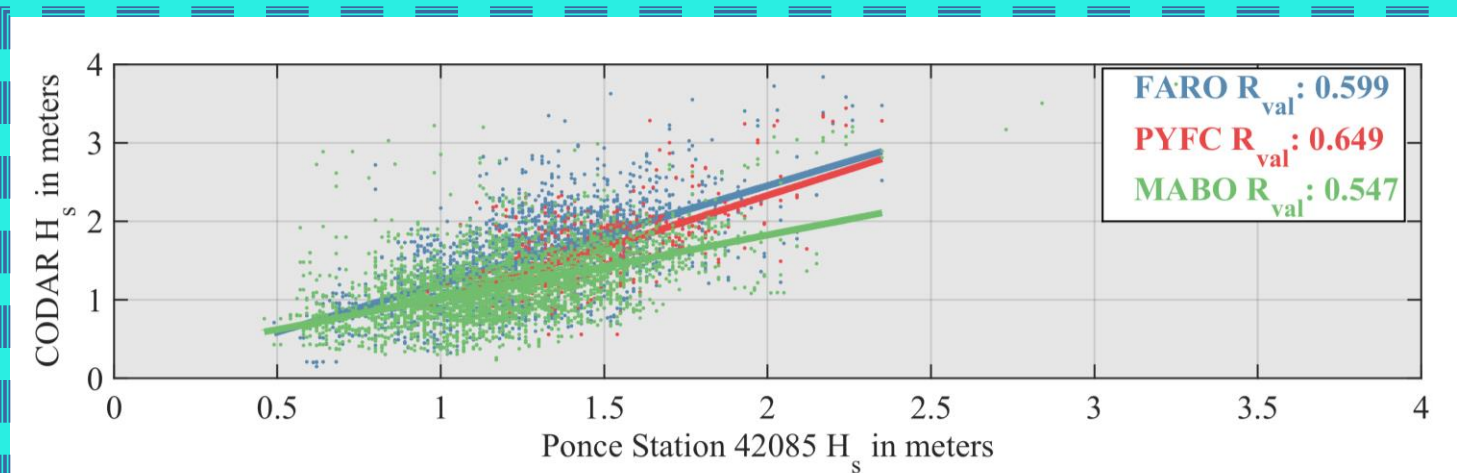


[Above] Cross spectra from 5 MHz signal.

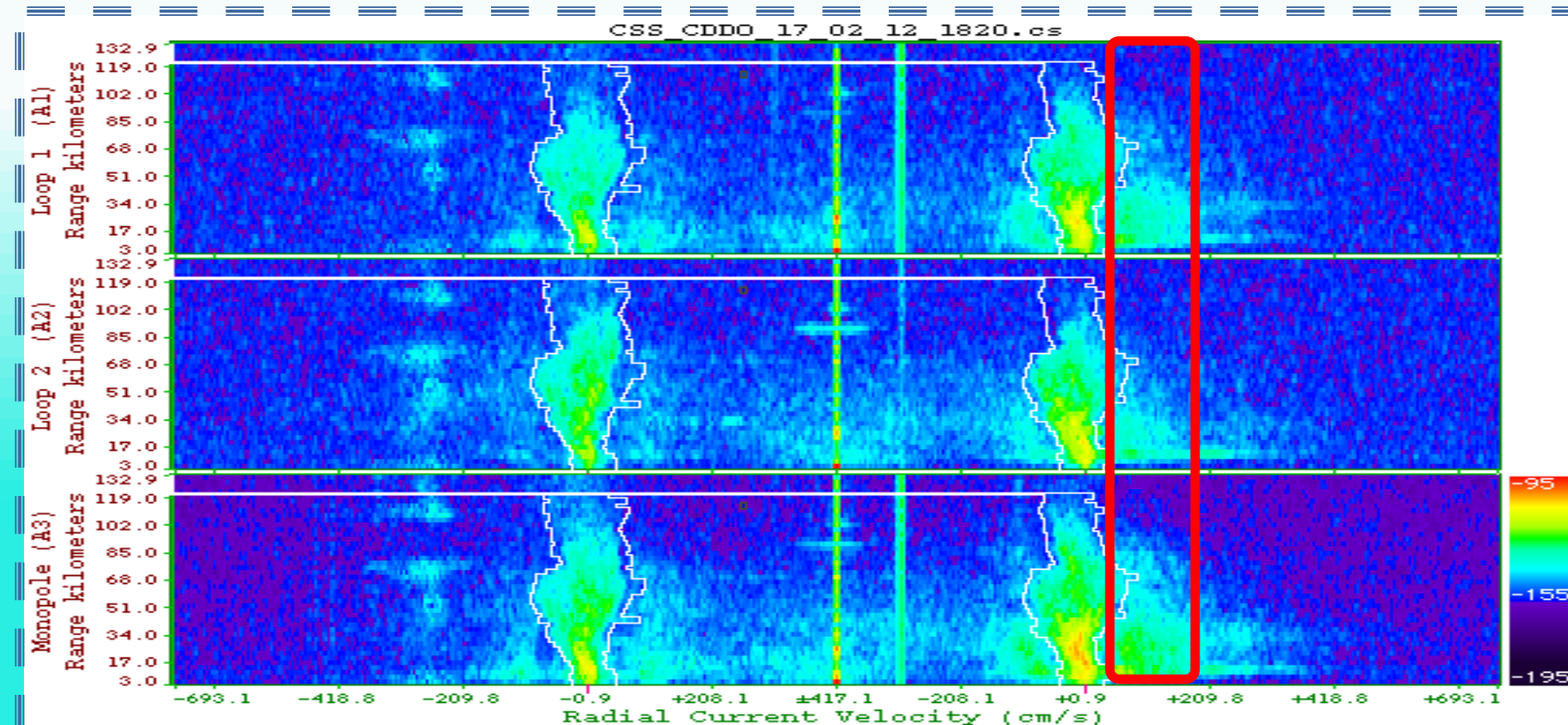
[Right] Time series comparison of significant wave height and dominant wave period between 5 MHz CODAR sites along southern PR and Ponce buoy station 42085.



[Right] H_s Correlation between 5 MHz CODAR and Ponce buoy.

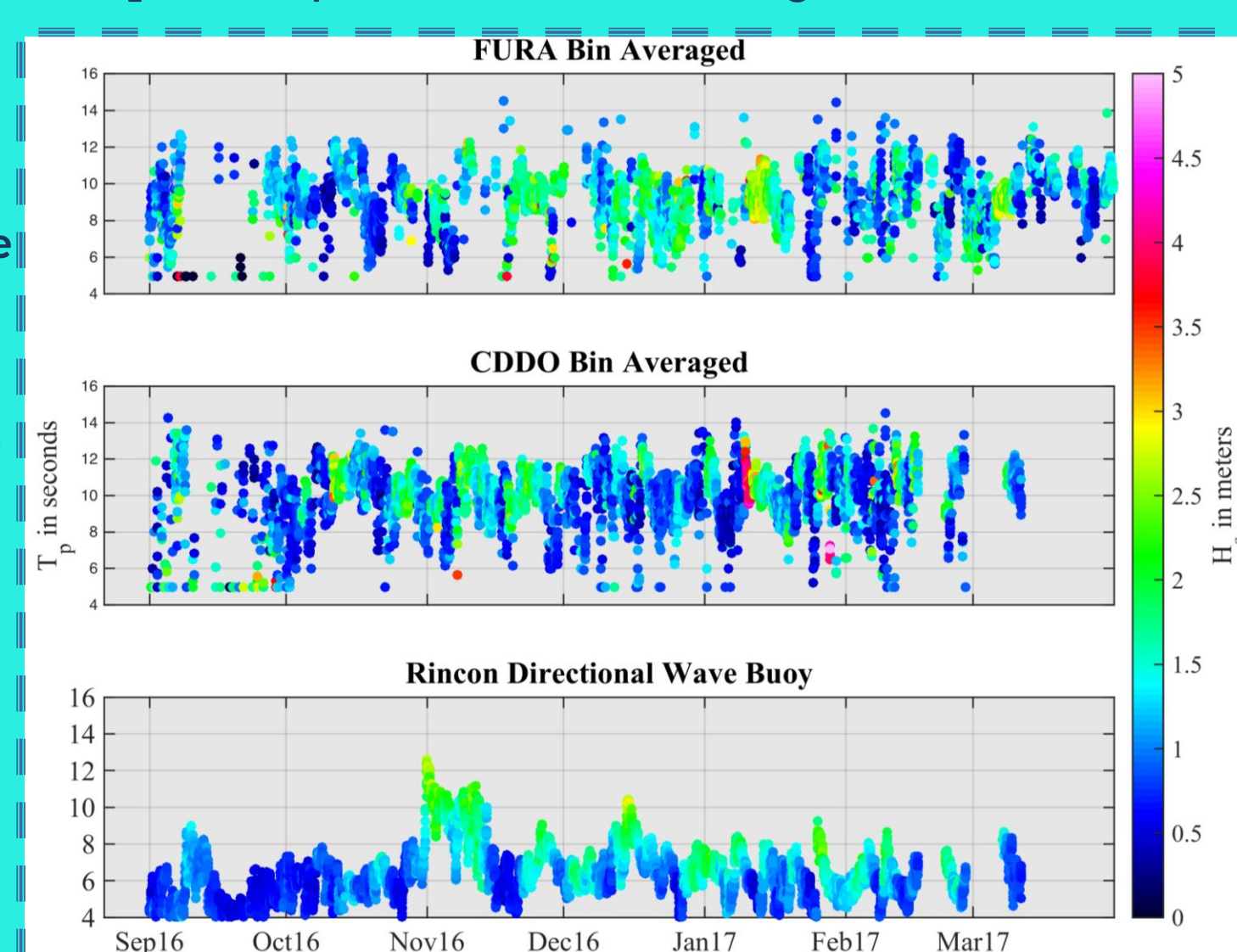


13MHz Wave Measurements

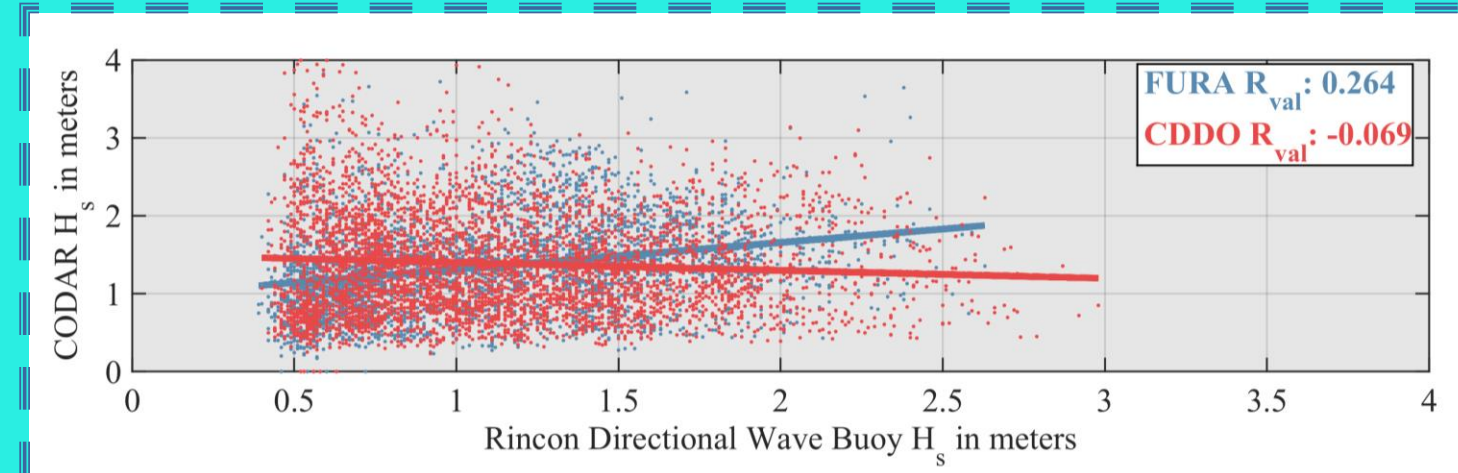


[Above] Cross spectra from 13 MHz signal.

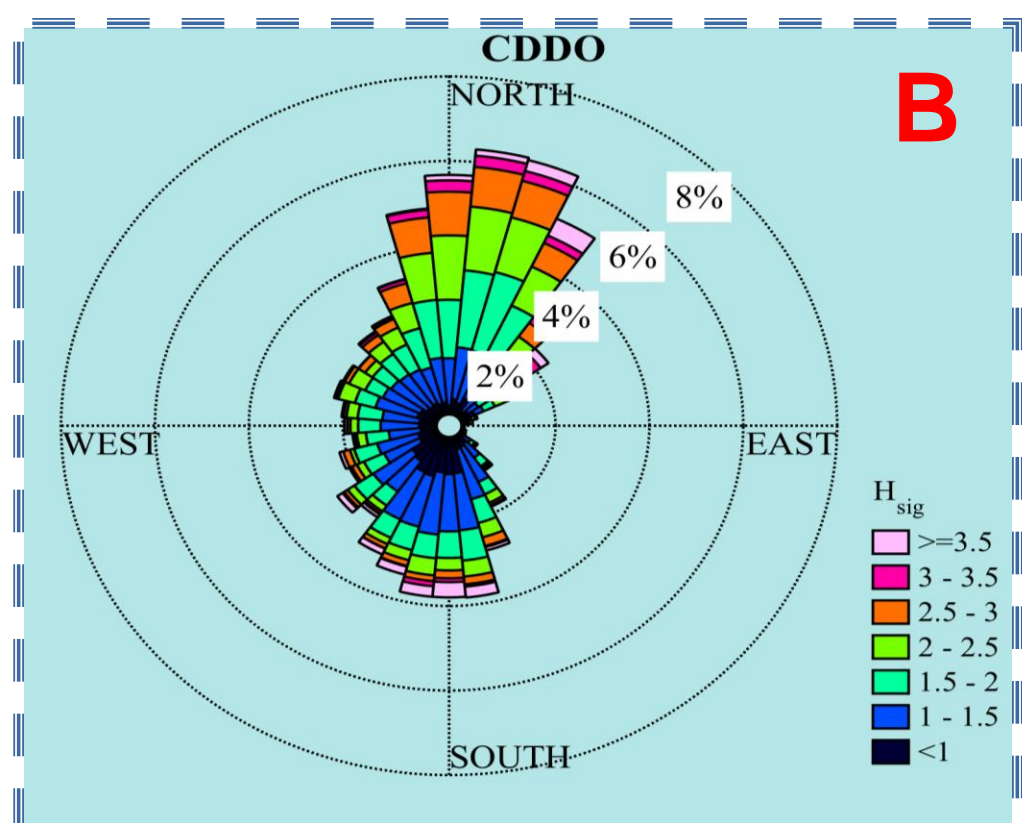
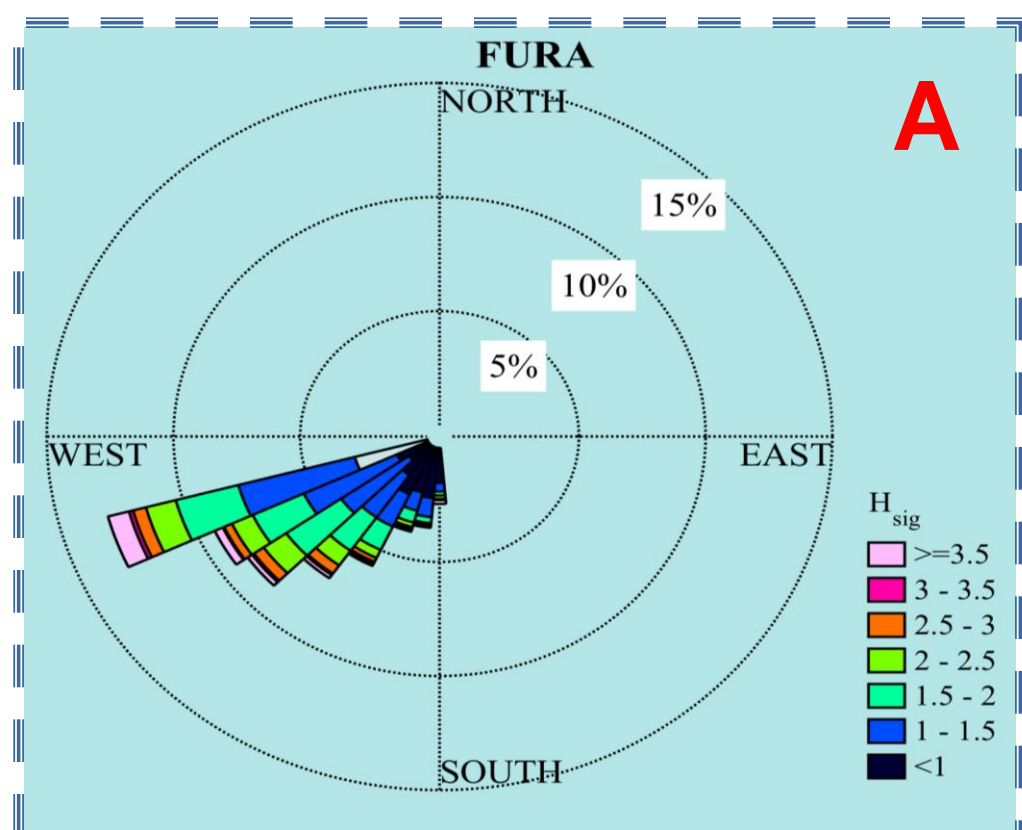
[Right] Time series comparison of significant wave height and dominant wave period between 13 MHz CODAR sites covering the Mona Passage and Rincon buoy station.



[Right] H_s Correlation between 13MHz CODAR and Rincon wave buoy.



CODAR Wave Direction



Mean wave direction for each of the 5 CODAR sites spanning September, 2016 – April, 2017 with associated significant wave heights. From left to right: FURA, CDDO, FARA, PYFC, MABO. Wave direction is averaged over several range cells configured in the SeaSonde software, which is dependent on frequency (13MHz – 3.020km bin, 5 MHz – 5.85km bin).

