



Williwaw Engineering

March 2, 2016

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Subject: February 2016 Monthly Report – RCUH P.O. #Z10115098

Dear Luis,

The following constitutes my monthly report for the subject agreement for services associated with February 2016.

Work Completed under Activity 1: “Provide technical and software support services to HNEI technical staff in programming data acquisition (DAS) controllers and analyzing data records in the following areas as assigned”:

- Monitored the device regularly via remote connection to the NWEI host PC in Room 106, Battery French. Downloaded data from PC as necessary, and updated device control settings when necessary.
- Analyzed output power data to produce monthly power performance data plot; see Attachment 1 for results.
- Analyzed Azura float angle data using MATLAB to produce a plot of 30 minute average float angle data for the deployment period. The Azura has not settled in the water noticeably since the January 9 mooring repair.
- Plotted daily humidity sensor data for the cRIO enclosure and drybox on board the Azura. The results continue to show that the drybox, which is entirely sealed from the Azura hull, has maintained humidity less than 10% throughout the deployment period while humidity has slowly increased inside the cRIO enclosure since the June deployment but appears to be stabilizing at less than 30%. See Attachment 3 for a plots of these results.

Please let me know if you have any questions or comments concerning this project.

Sincerely,

Terry Lettenmaier

Attachment 1: Azura power performance data plots

Attachment 2: Azura 30 minute average float angle data plots

Attachment 3: Azura cRIO enclosure and drybox humidity

Attachment 1

Azura power performance data plots

Summary

- The Azura AB float was re-installed on January 9 and the AB mooring riser shortened to keep the AB float below the surface and correct a mooring design problem discovered during the Azura deployment.
- The Waverider buoy was not deployed during the period Jan 1-12, 2016 so data is not available for that time period.
- January and February data on the following 3 slides shows Azura performance after AB float repair.
- For comparison, June-October data prior to the January mooring change is shown on the last two slides.

Azura Power Performance – January-February, 2016

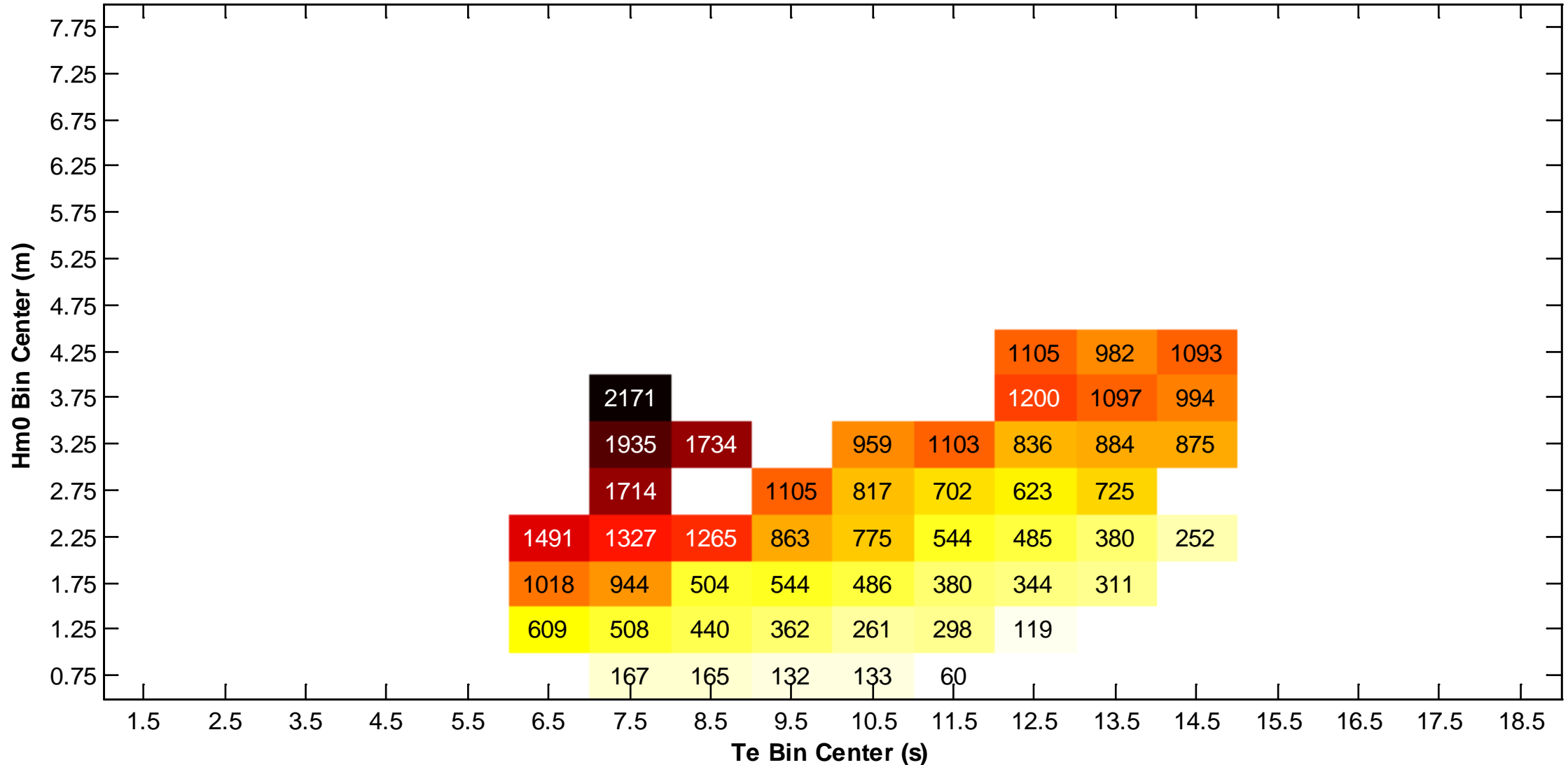


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95th percentile power matrix

95th Percentile Device Dc Output Power (W)

Cumulative data, months of Jan 2016 - Feb 2016; 30 minute periods with > 20 minutes operation included



Azura Power Performance – January-February, 2016

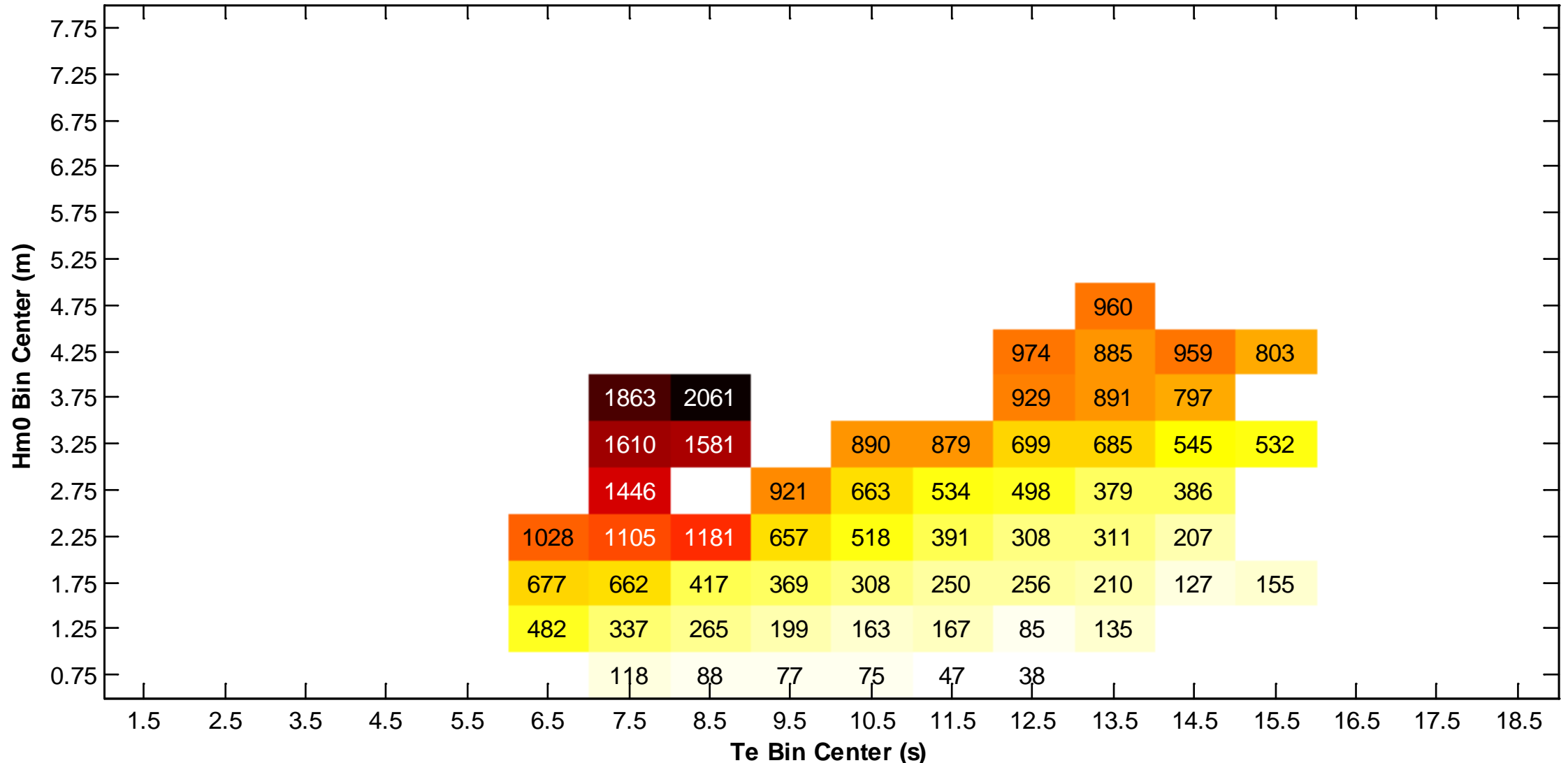


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Mean power matrix

Mean Device Dc Output Power (W)

Cumulative data, months of Jan 2016 - Feb 2016; 30 minute periods with > 20 minutes operation included



Azura Power Performance – January-February, 2016

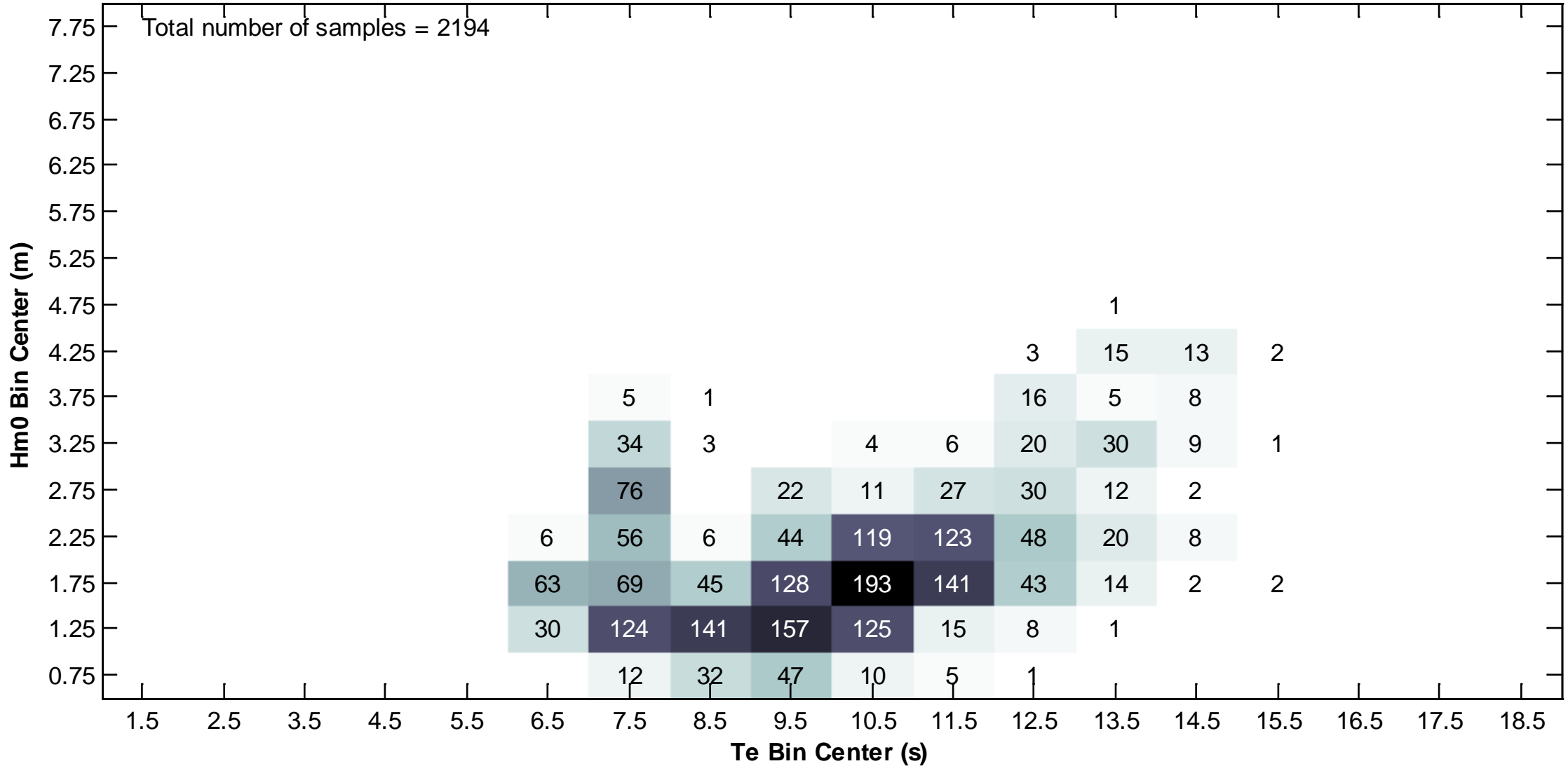


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Sample Count

Sample Count (30 min sample periods)

Cumulative data, months of Jan 2016 - Feb 2016; 30 minute periods with > 20 minutes operation included



Azura Power Performance – June-October 2015

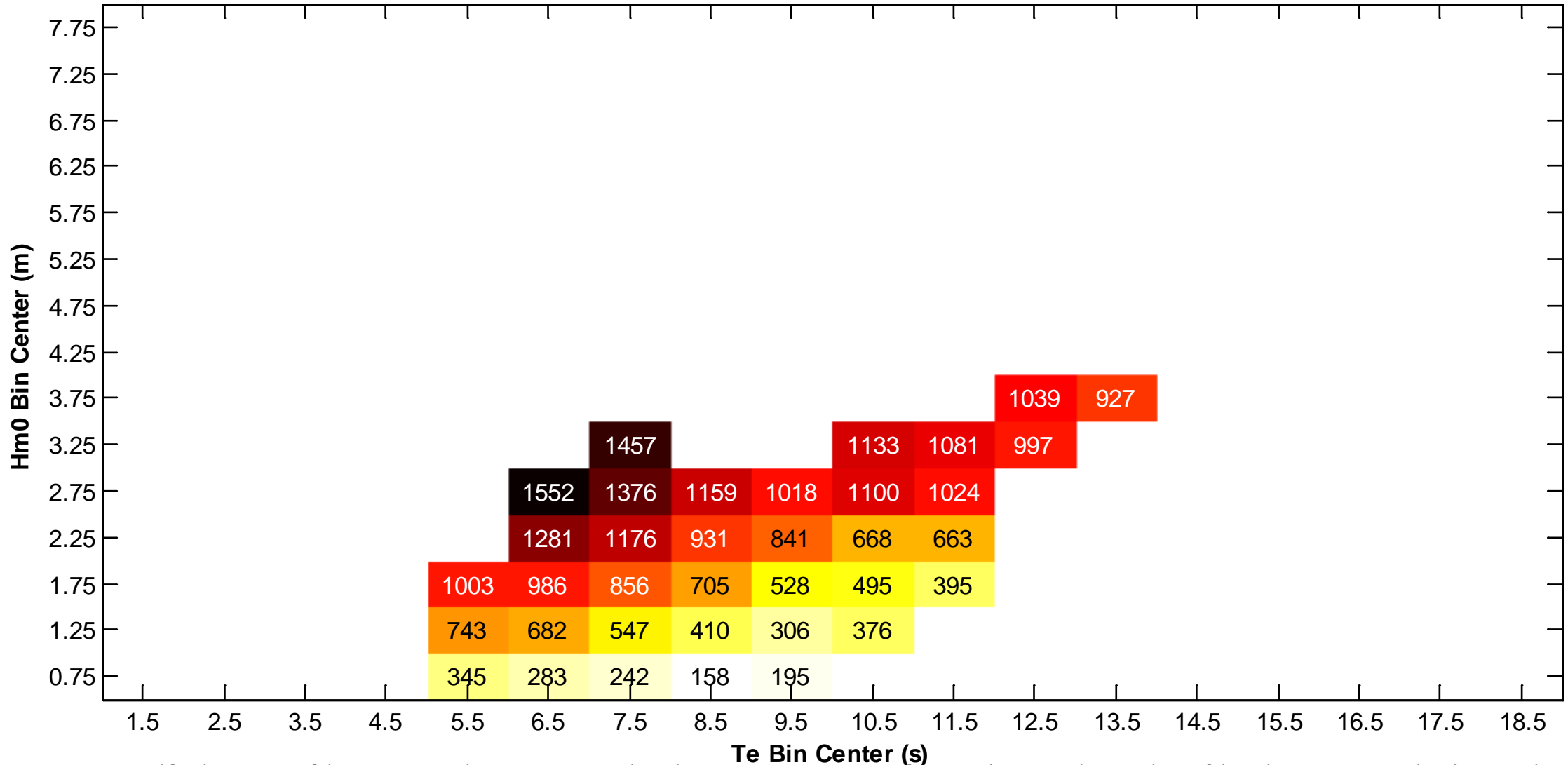


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95th percentile power matrix

95th Percentile Device Dc Output Power (W)

Cumulative data, months of Jun 2015 - Oct 2015; 30 minute periods with > 20 minutes operation included



Azura Power Performance – June-October 2015

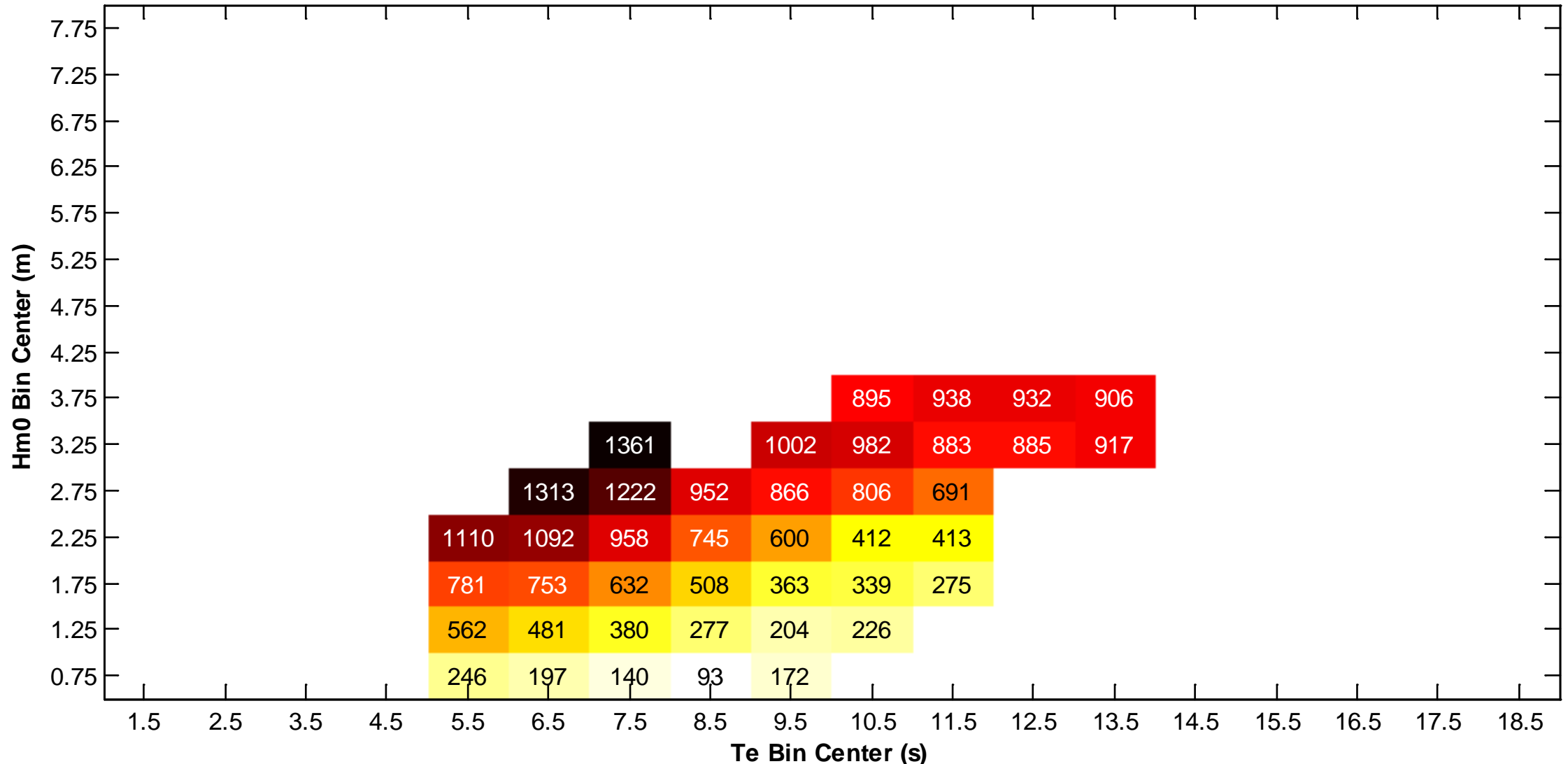


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Mean power matrix

Mean Device Dc Output Power (W)

Cumulative data, months of Jun 2015 - Oct 2015; 30 minute periods with > 20 minutes operation included



Attachment 2

Azura 30 minute average float angle data plots

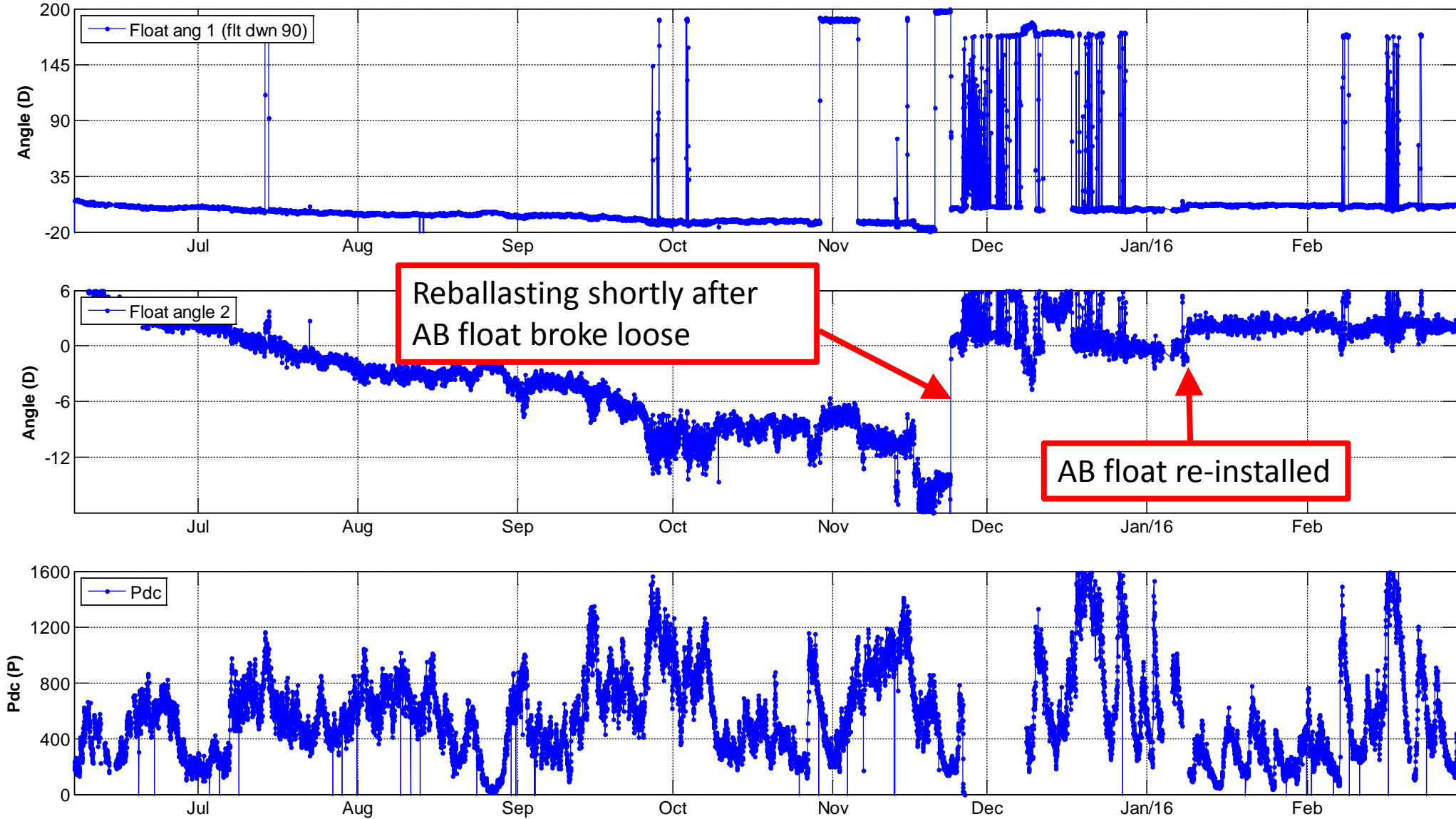
Summary

- See Slide 2 for plot of June 2015 – Feb 2016 data
- Average float angle has been steady near zero angle since the AB subsurface float was re-installed on January 9.

Azura 30 min average float angle data through Feb 2016



Float angle plots from file NWEI 30m avg power w float angle 201506 to 201602.txt



Attachment 3

Azura cRIO enclosure and drybox humidity plots

