



Lancaster
University



A first look into the Trend Data

Week 13 – 2020

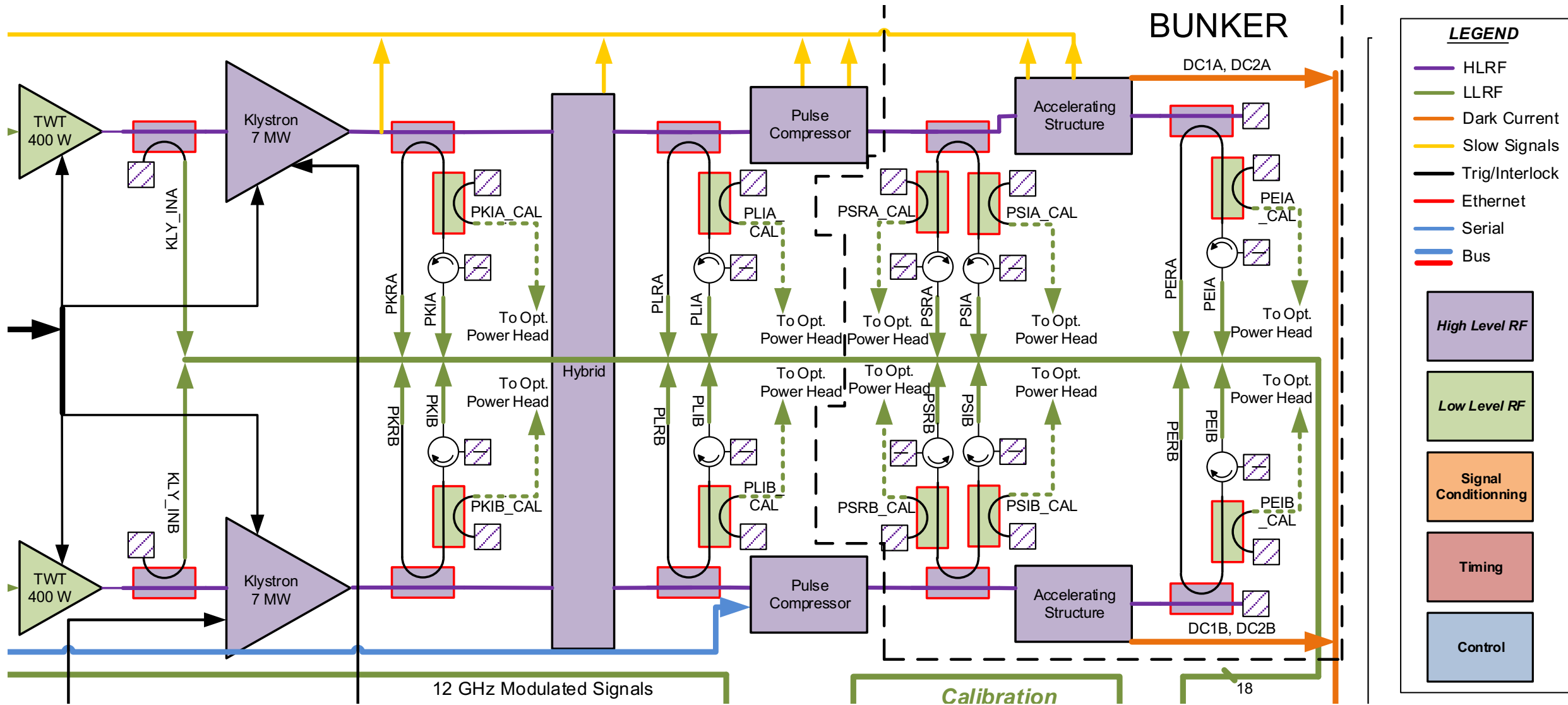
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Disclaimer

- The following is a status report on the manipulation of the trend data.
- None of the plots are meant to present any meaningful analysis.
- Don't go nuts if something looks weird (Я смотрю на вас, товарищи).

XBOX3 – Lines A&B Functional Diagram (zoom)

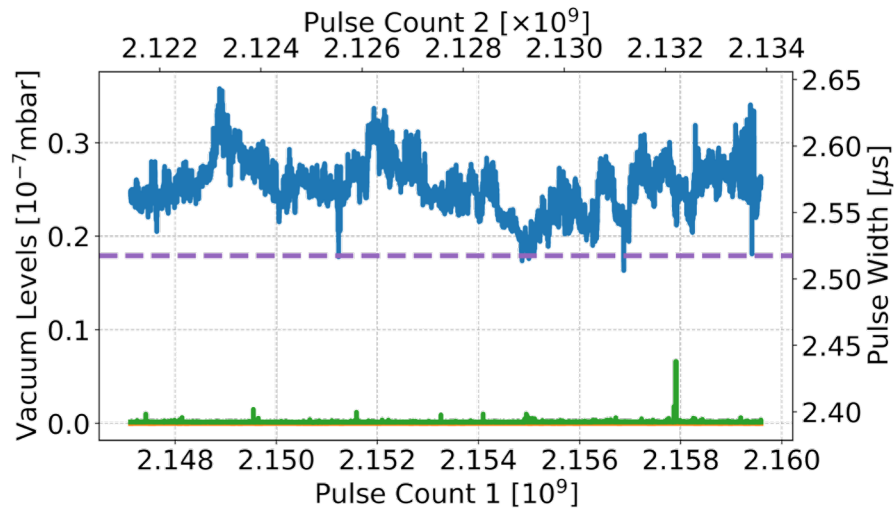


List of Channels on the File (~115)

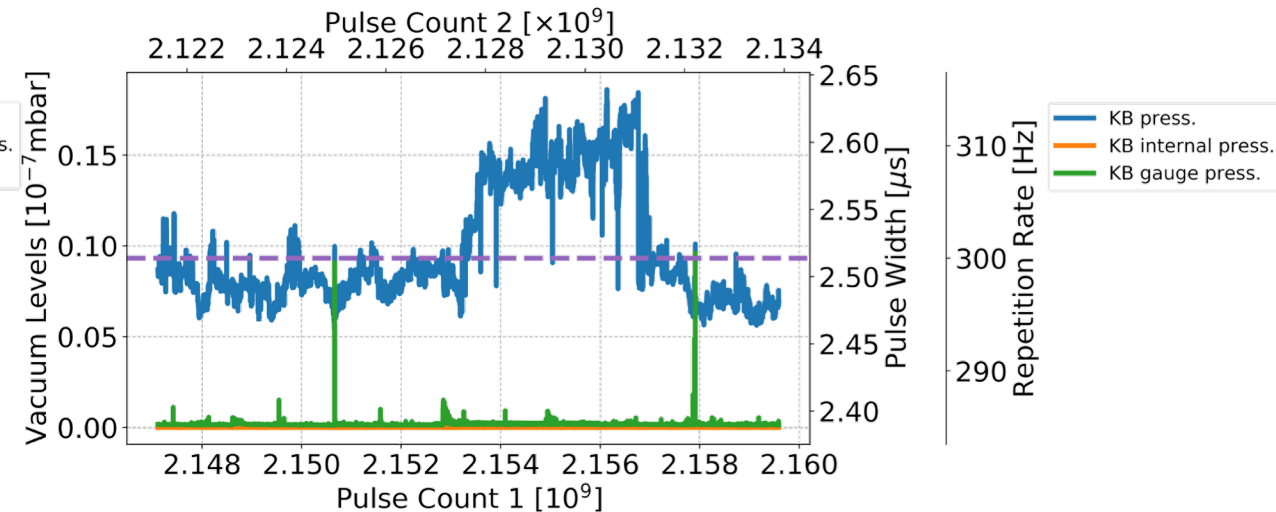
- 'sys.cpu0.load',
- 'sys.cpu1.load',
- 'sys.cpu2.load',
- 'sys.cpu3.load',
- 'klystron_a_pressure',
- 'hybrid_1_pressure',
- 'pulse_compressor_1_pressure',
- 'line_1_pressure',
- 'load_1_pressure',
- 'dut_1_pressure',
- 'klystron_b_pressure',
- 'hybrid_2_pressure',
- 'pulse_compressor_2_pressure',
- 'line_2_pressure',
- 'load_2_pressure',
- 'dut2_pressure',
- 'klystron_a_temp',
- 'hybrid_1_temp',
- 'pc1_left_temp',
- 'pc1_right_temp',
- 'pc1_hybrid_temp',
- 'structure_1_in_temp',
- 'structure_1_out_temp',
- 'load_1_in_temp', 'load_1_temp',
- 'load_1_out_temp',
- 'klystron_b_temp',
- 'hybrid_2_temp', 'pc2_left_temp',
- 'pc2_right_temp',
- 'pc2_hybrid_temp',
- **'structure_2_in_temp',**
- **'structure_2_out_temp',**
- 'load_2_in_temp', 'load_2_temp',
- 'load_1_flow',
- 'load_2_flow',
- '1klyina_amp_max',
- '1klyinb_amp_max',
- '1pkia_amp_max',
- '1pkib_amp_max',
- '1plia_amp_max',
- '1plib_amp_max',
- '1pkra_max',
- '1pkrb_max',
- '1psi_amp_max',
- '1pei_amp_max',
- '1klyina_ampcursor_blue_mean_',
- '1klyinb_ampcursor_blue_mean_',
- '1pkia_ampcursor_blue_mean_',
- '1pkib_ampcursor_blue_mean_',
- '2psi_amp_pulse_width',
- '2pei_amp_pulse_width',
- 'gauge_klystron_a_pressure_',
- 'gauge_pc_1_pressure_',
- 'gauge_line_1_pressure_',
- 'gauge_load_1_pressure_',
- 'gauge_klystron_b_pressure_',
- 'gauge_pc_2_pressure_',
- 'gauge_line_2_pressure_',
- 'gauge_load_2_pressure_',
- 'gauge_dut_1_pressure_',
- 'gauge_dut_2_pressure_',
- 'repetition_rate',
- **'pulse_count_1',**
- **'pulse_count_2',**
- **'timestamp'**

Example 1: Klystron Vacuum

Klystron A



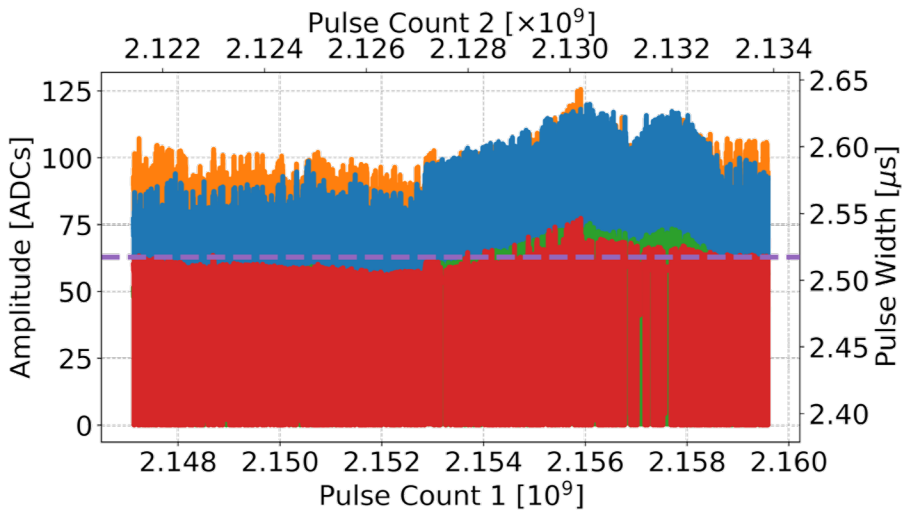
Klystron B



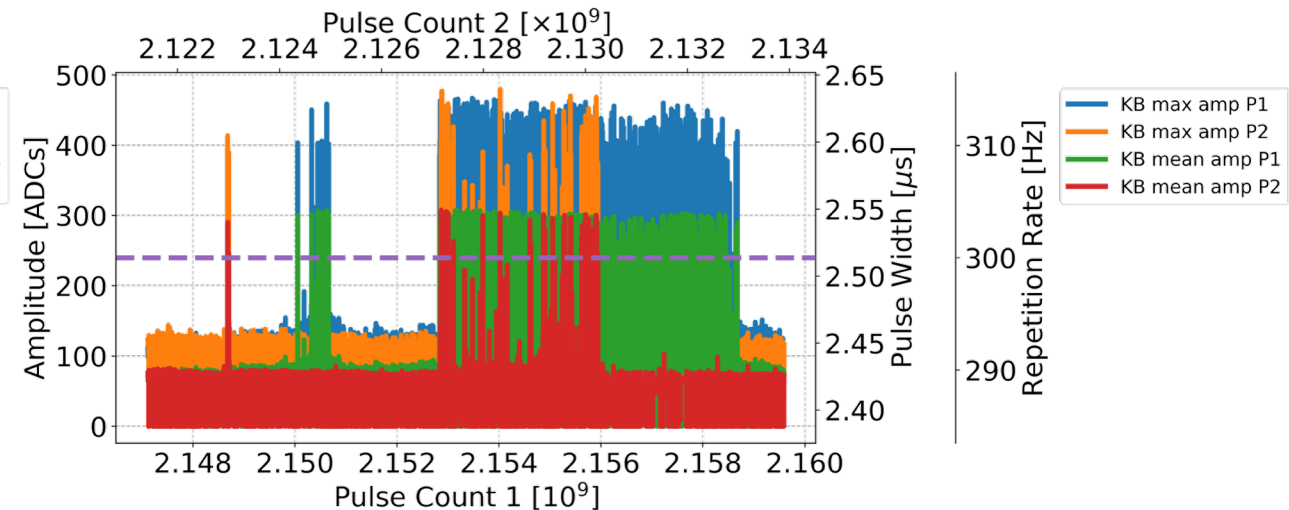
- The gauges show fast, or what looks to be “pulse-by-pulse”, features.
- Not sure at this point that the data is saved synchronous to the pulsing.

Example 2: Klystron Pulse Amplitude

Klystron A



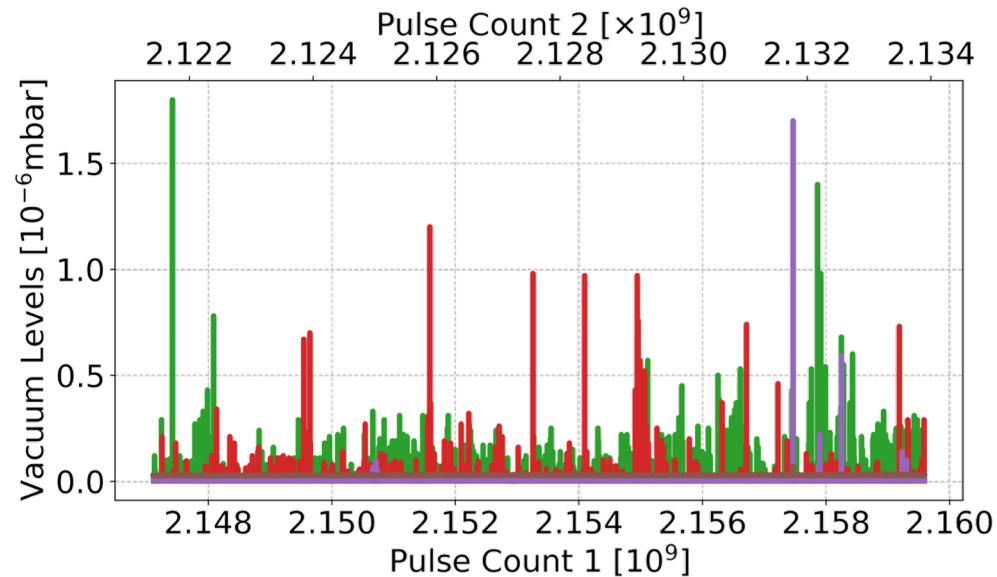
Klystron B



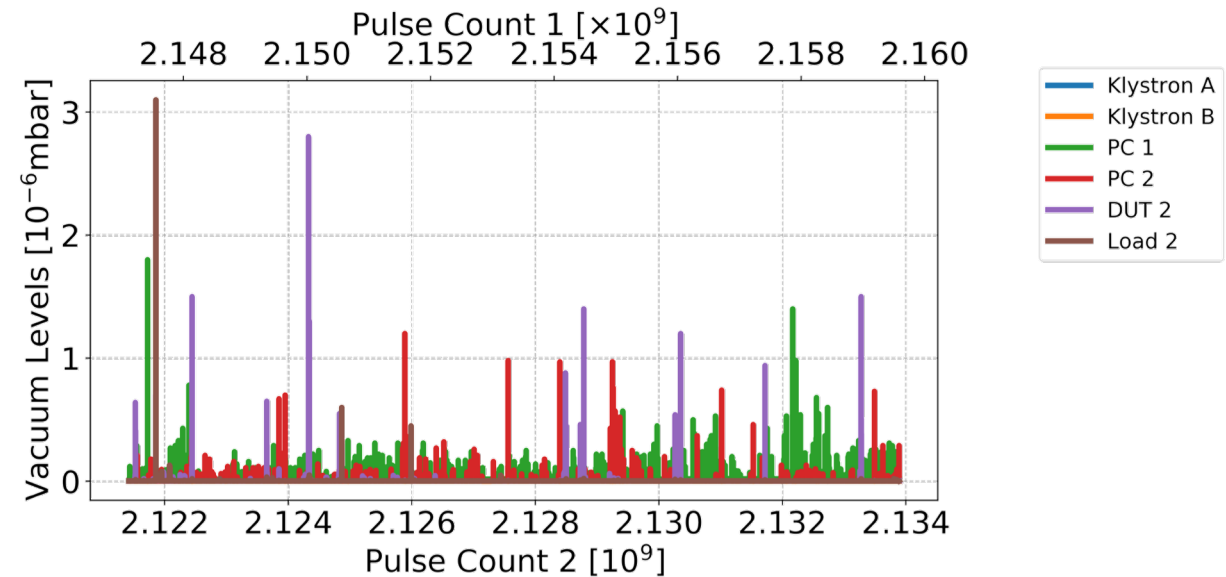
- We assume that the units are uncalibrated ADC counts.
- Question: How is the pulse width calculated?

Example 3: Line Vacuum

Line 1



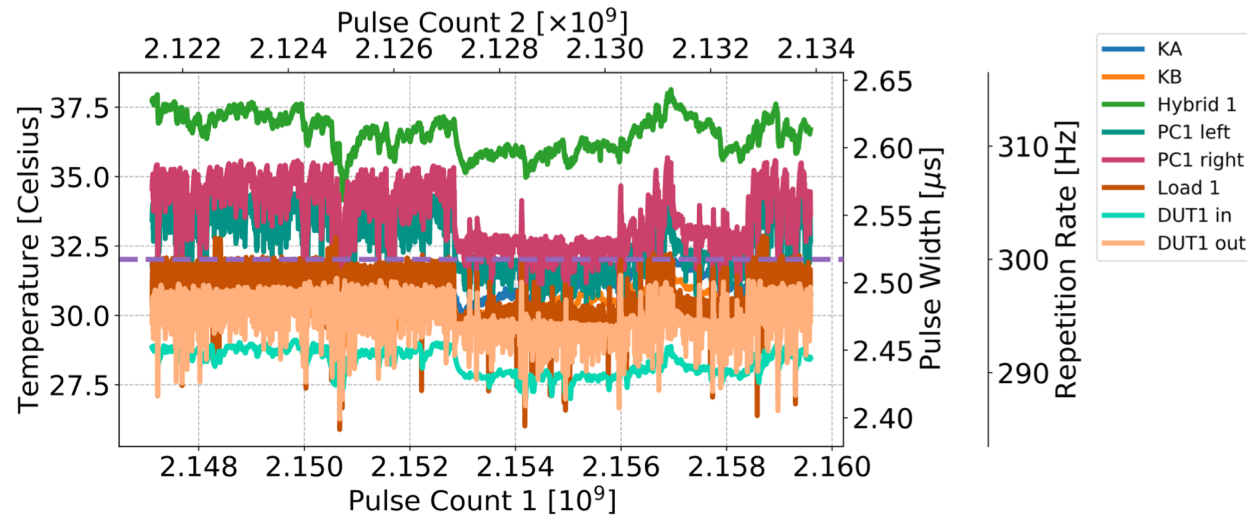
Line 2



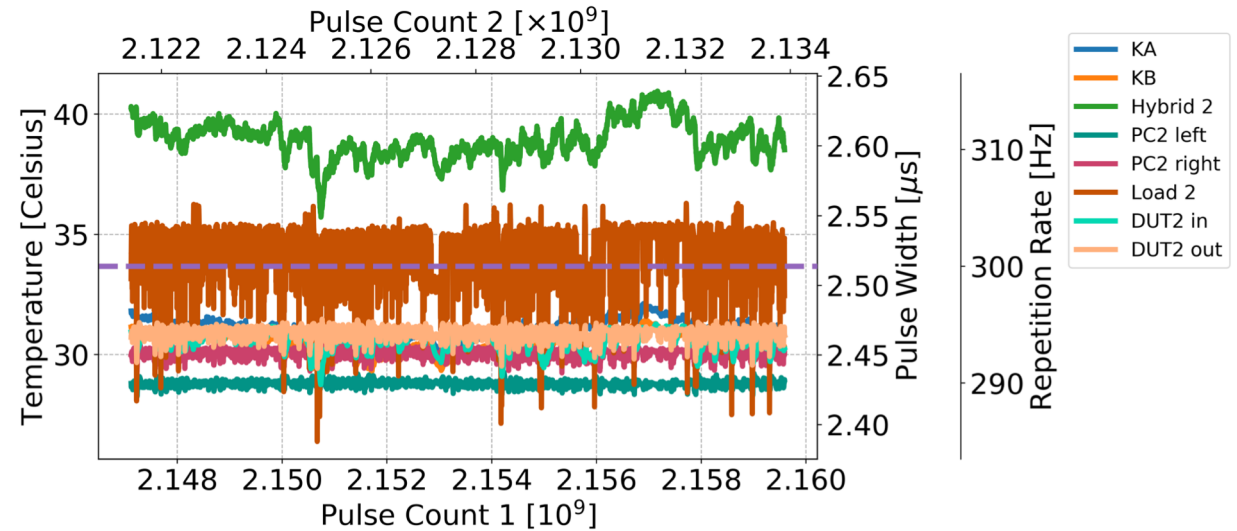
- The question of the sampling rate and synchronization remains here.

Example 4: Line Temperatures

Line 1

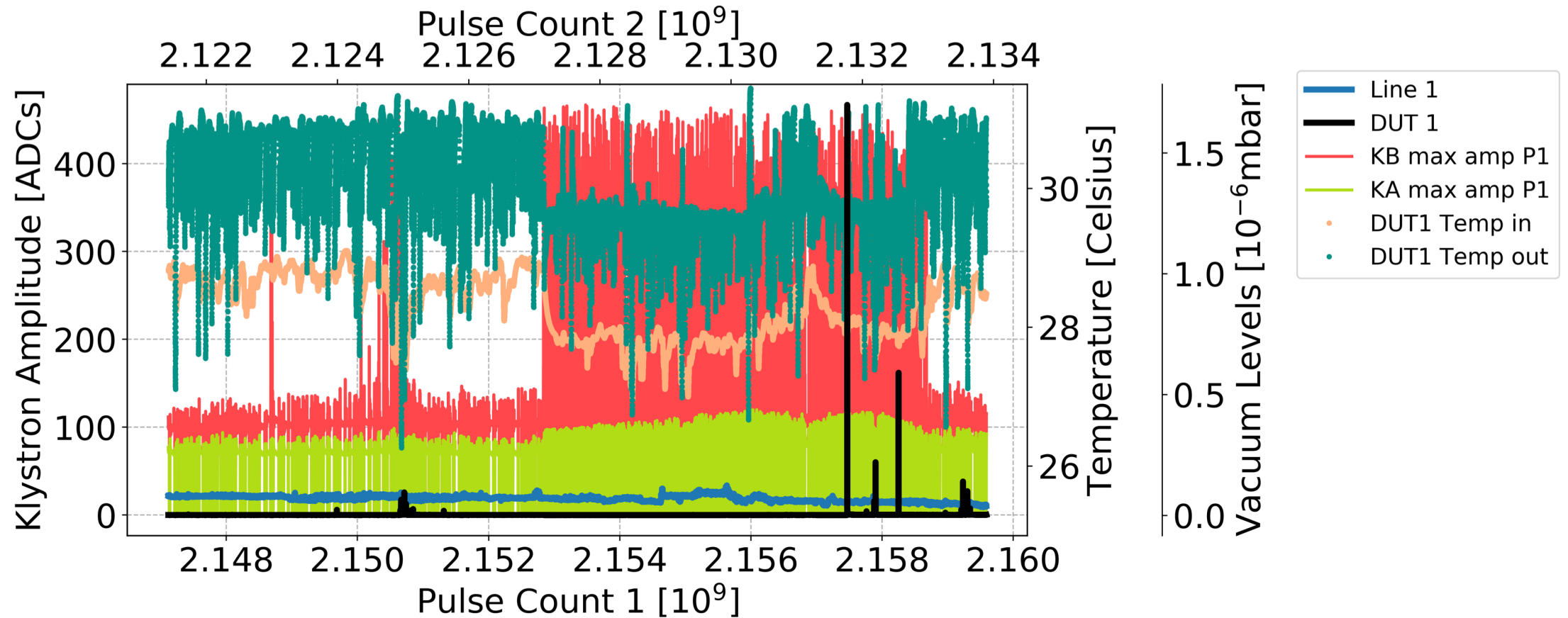


Line 2



- Question: Where is Hybrid 2?

Last one... (Line 1)



To summarize:

- Work in progress... appreciate your patience!
- We may need some help from Ben and Vero to cross check the channels' IDs and units.
- Sampling rate and synchronization need to be cross checked too.
- Calibrations need to be applied, using other files.
- Having these channels will finally let us do some more in depth analysis of some of the events.