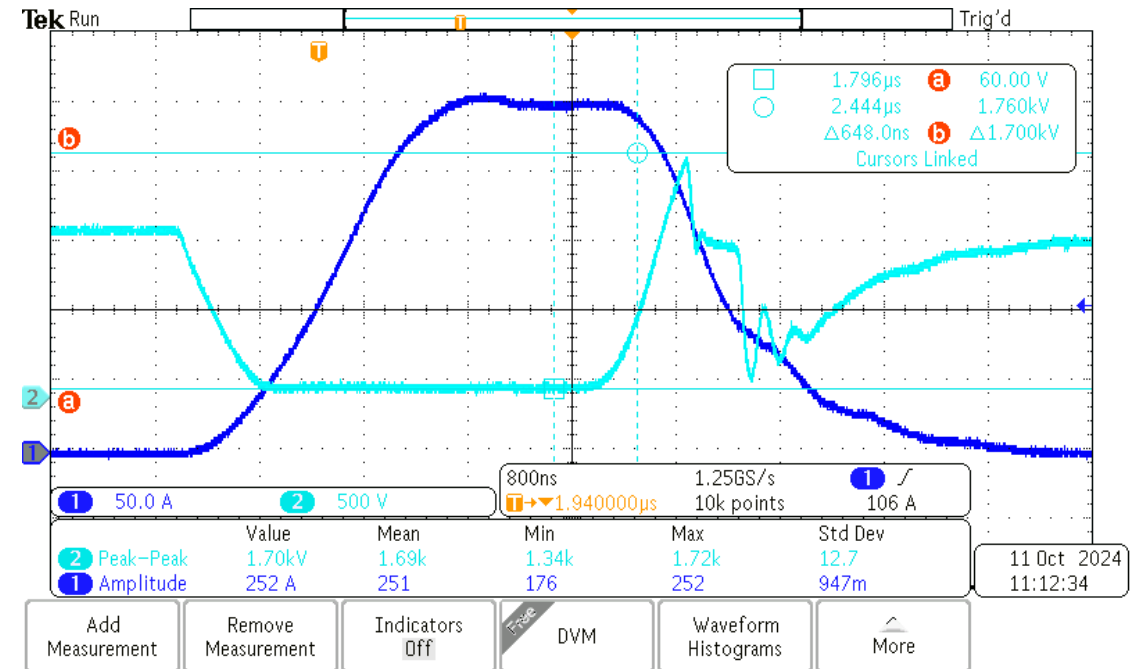


# **X-Box Summary**

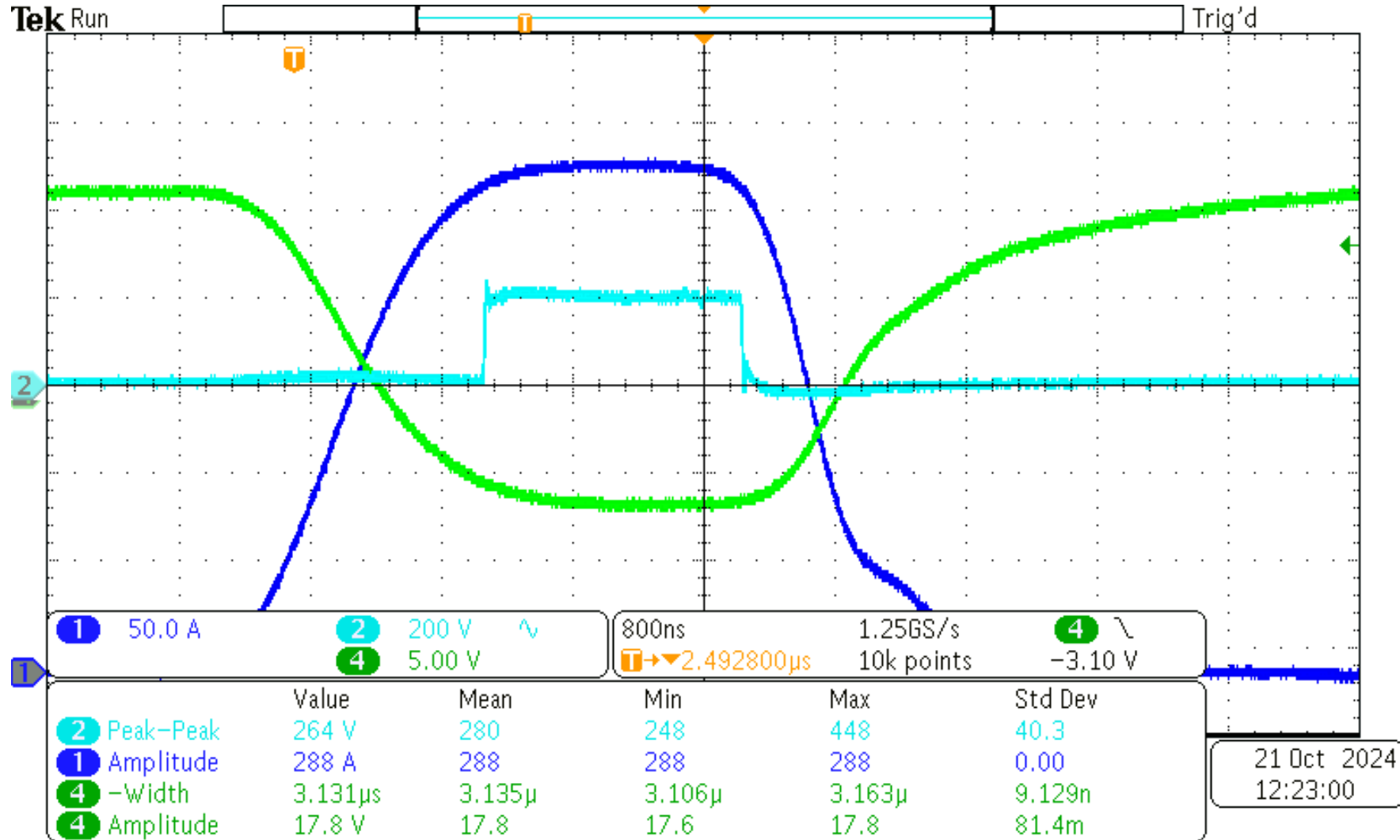
**23.10.2024**

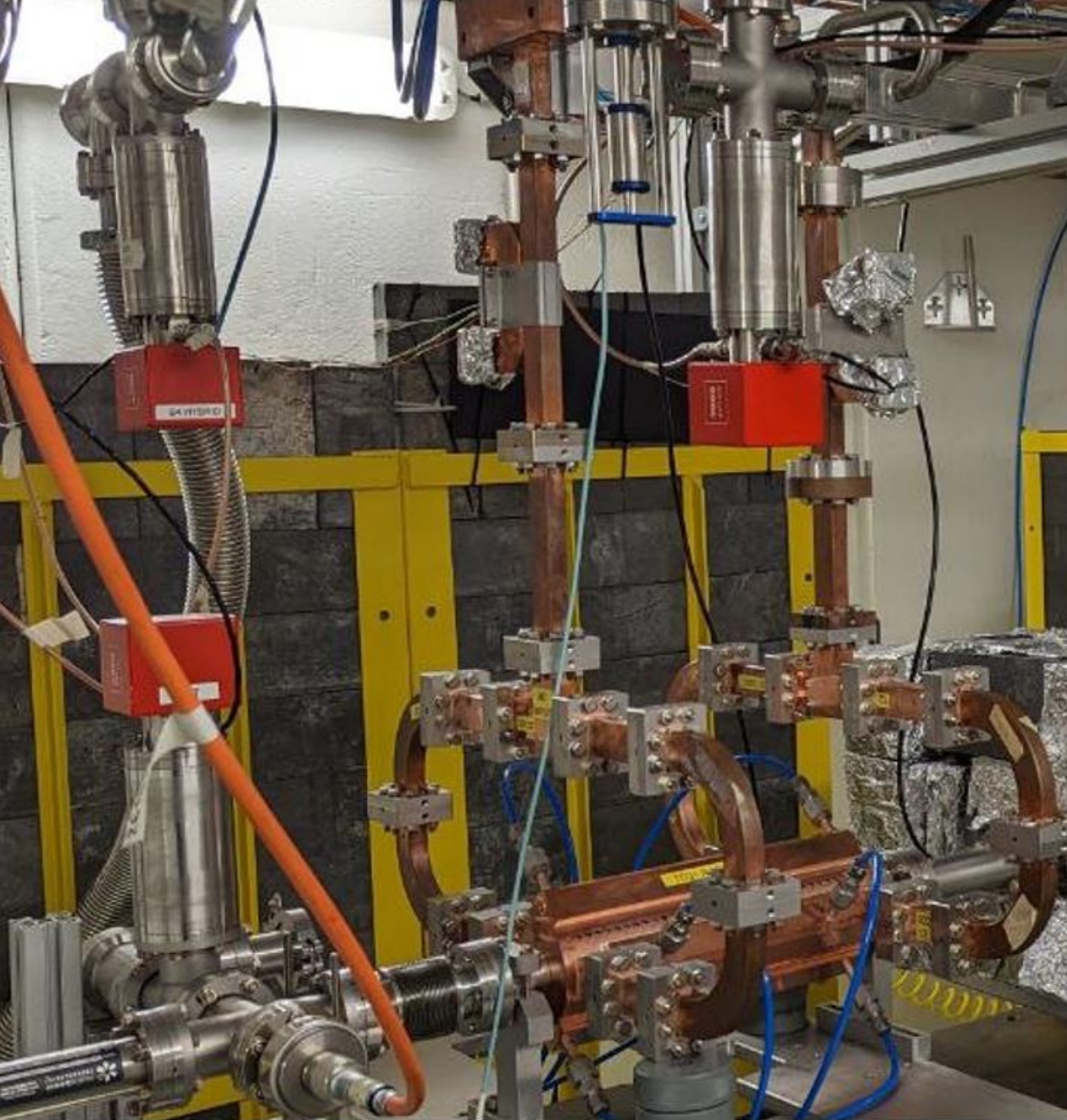
# X-Box 2 Modulator – Scandinova visit

- **Fixed broken IGBT in SU**
- **Several spares for SU arrived (+3)**
- **Back spike measurement campaign**
  - Lots of IGBTs at max. capacity (1.7kV)
  - Delays eliminated to fix problem
  - Pinched fiber optic – double trigger in one SU
- **Tuned for pulse flatness**
- **Run nicely for ~5h, then huge arc**
  - Interlock (overcurrent) in all SU
  - One IGBT broken
- **Fixed broken IGBT in SU before they left**
  - Also, power glitch didn't helped...



# X-Box 2 Modulator – HV pulse shape

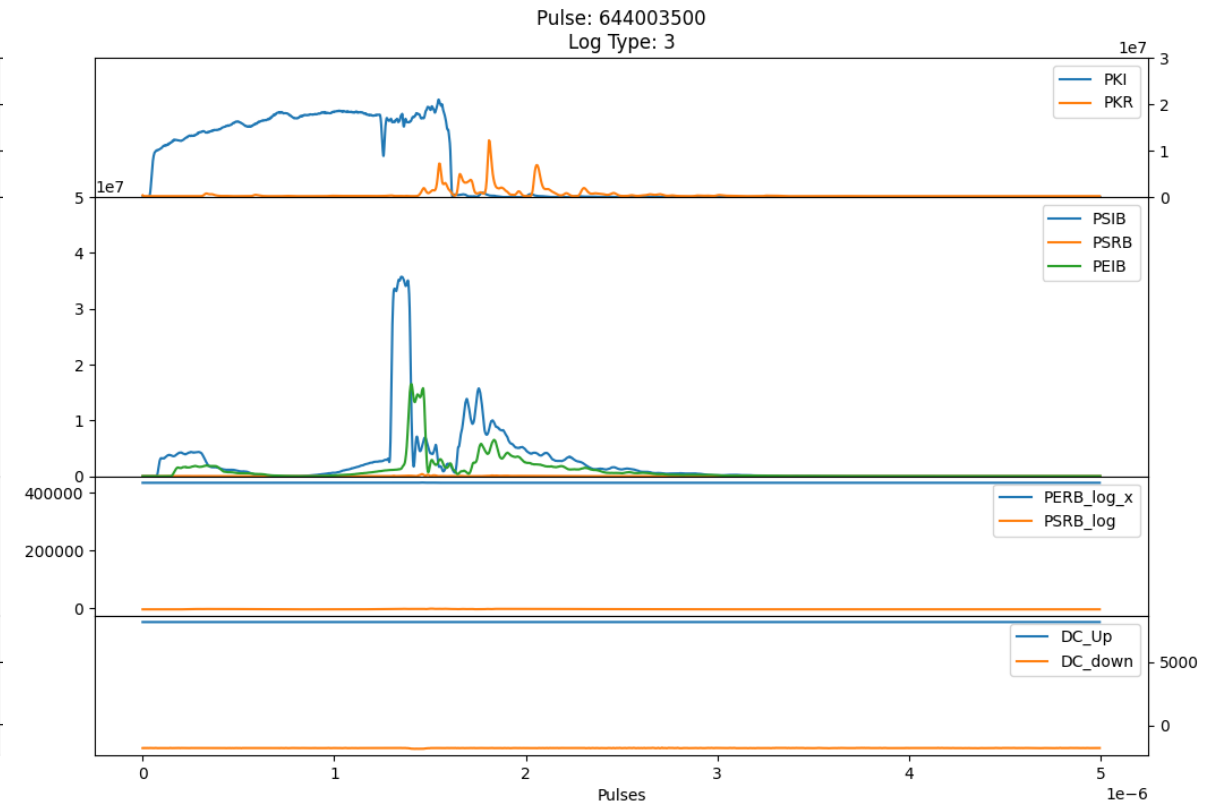
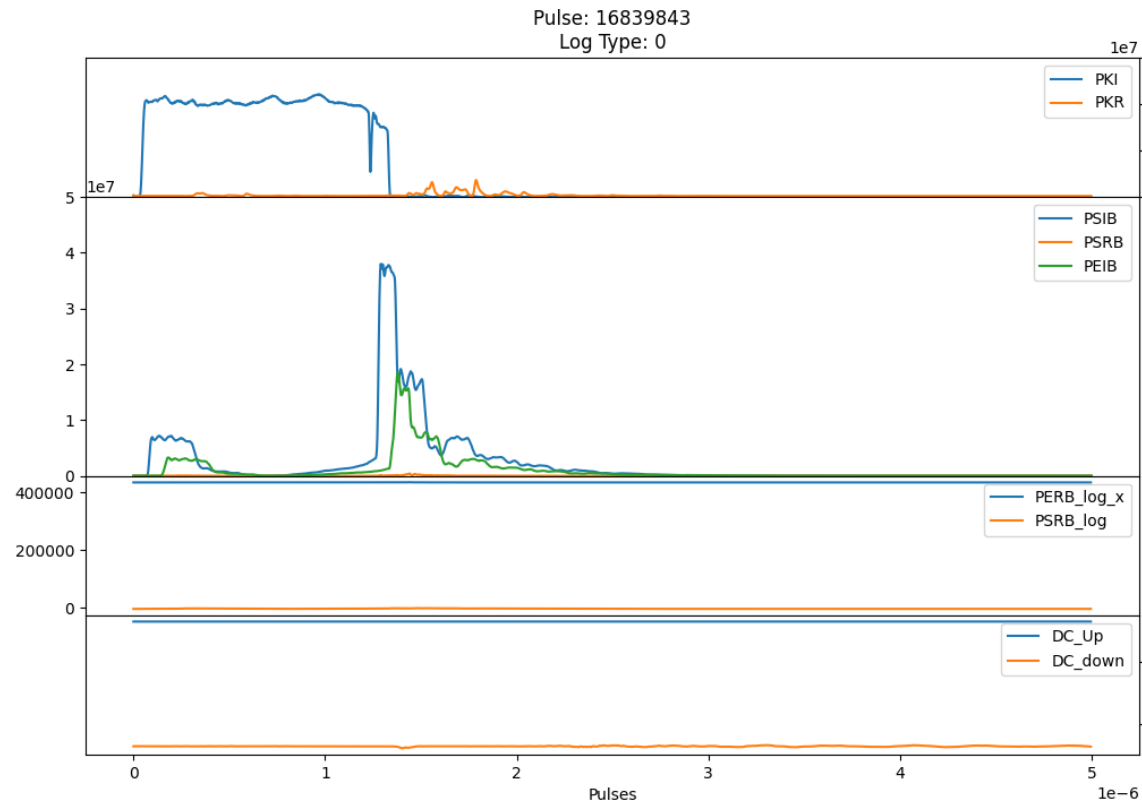




## X-Box 2 TD31 N3 N4: Structure B

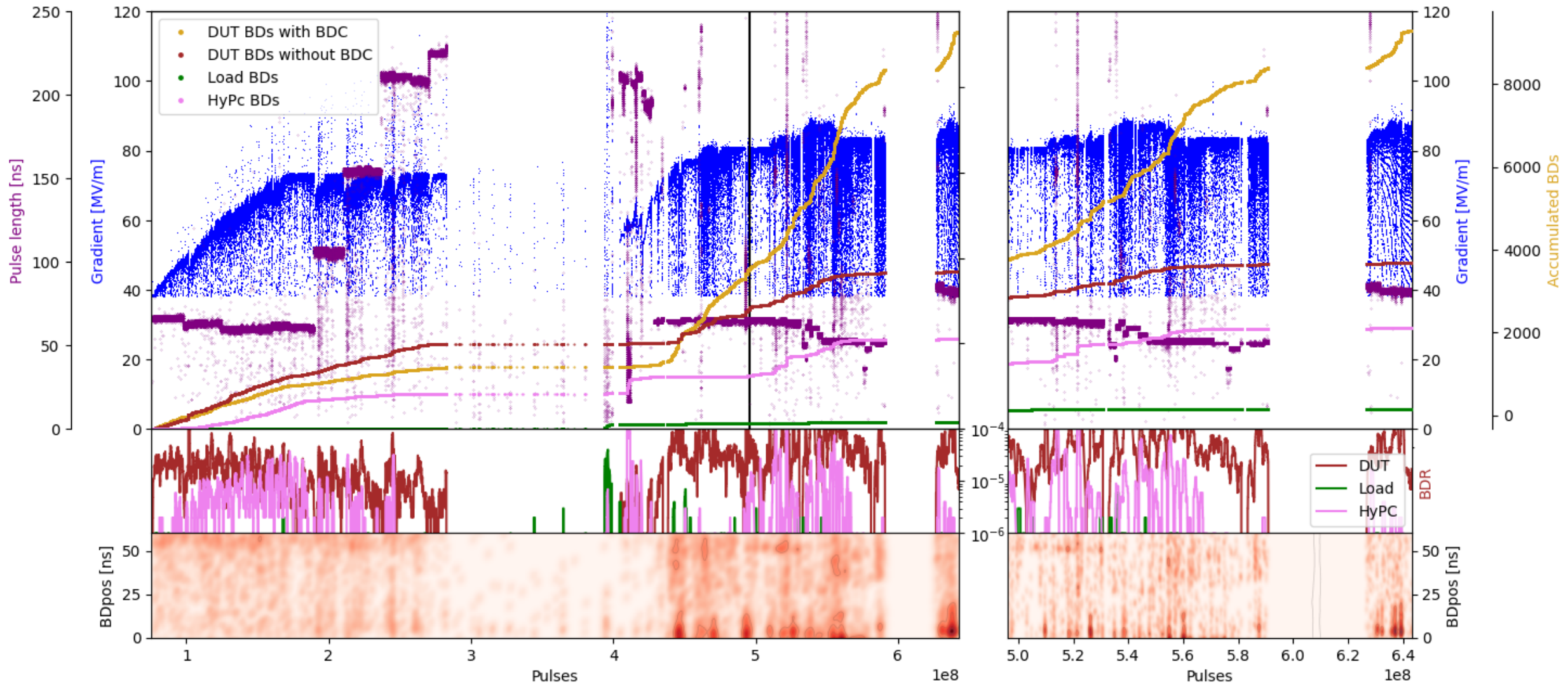
- **Restarted after visit 18.10.2024**
- 100:1 ratio, all power to Structure B
- Pulse width 100ns
- **Setpoint DUT 48MW -> 54MW**
- BDR=2E-5 (Monday 20th)
- **Changed pulse shape (Igor's request)**
- **Fixed problem with pulse counter**
  - Saved old and corrected TDMS files
  - Corrected PXI Pulse count.txt too
- **PXI weird behaviour (?)**

# X-Box 2- RF Pulse shape

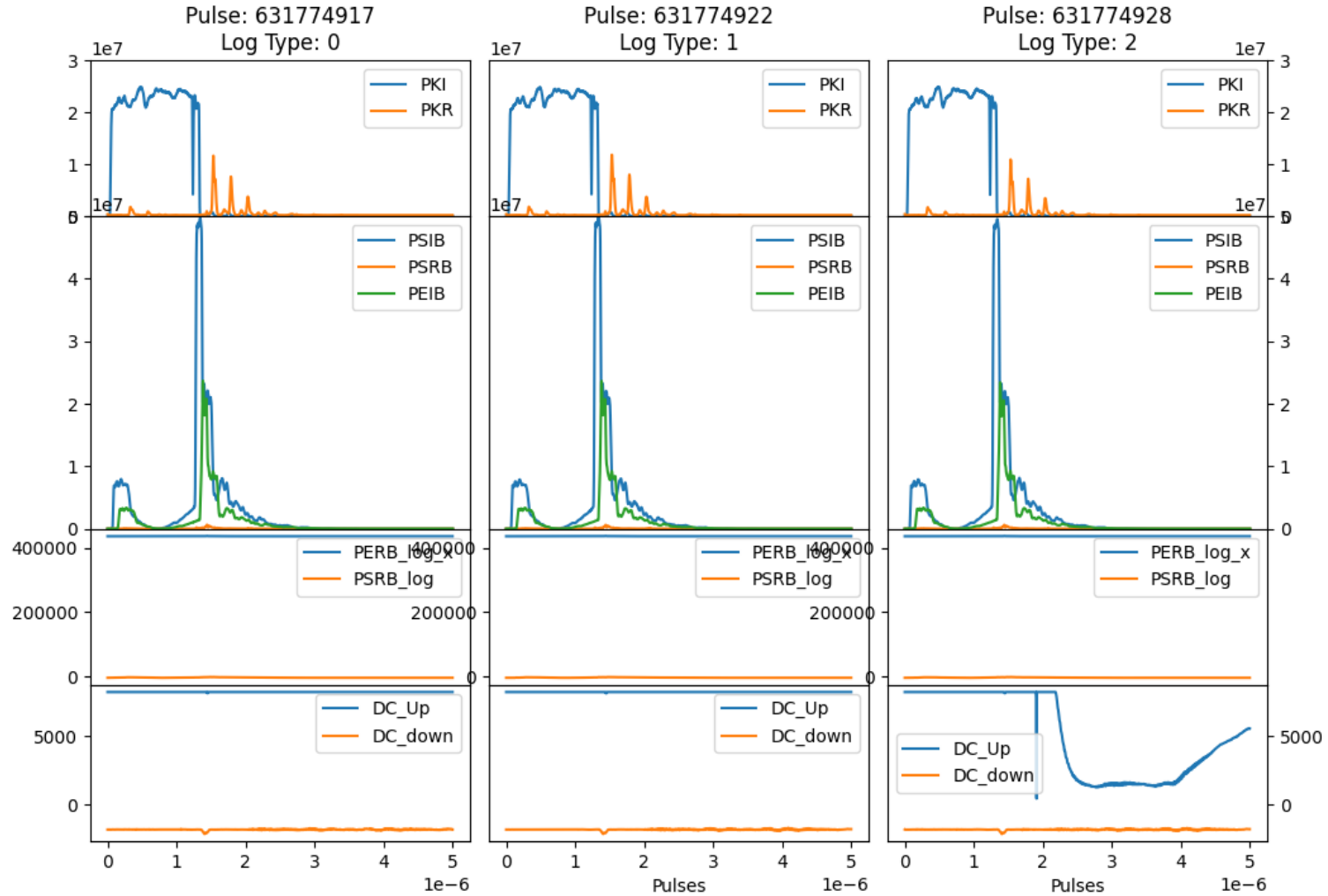




# TD31 N3 N4 Structure B- Gradient

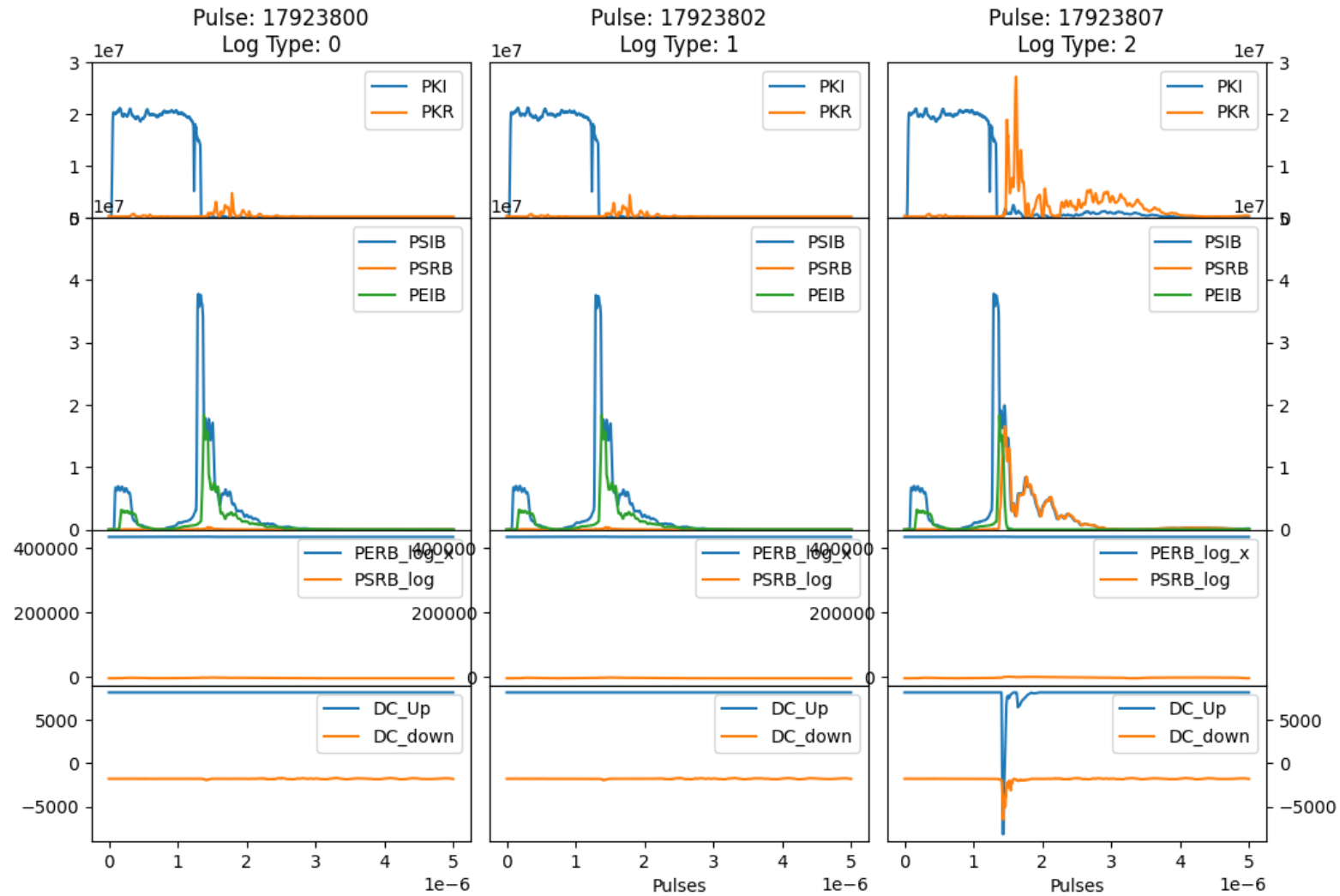


# TD31 N3 N4 Structure B- Pulses 18 October

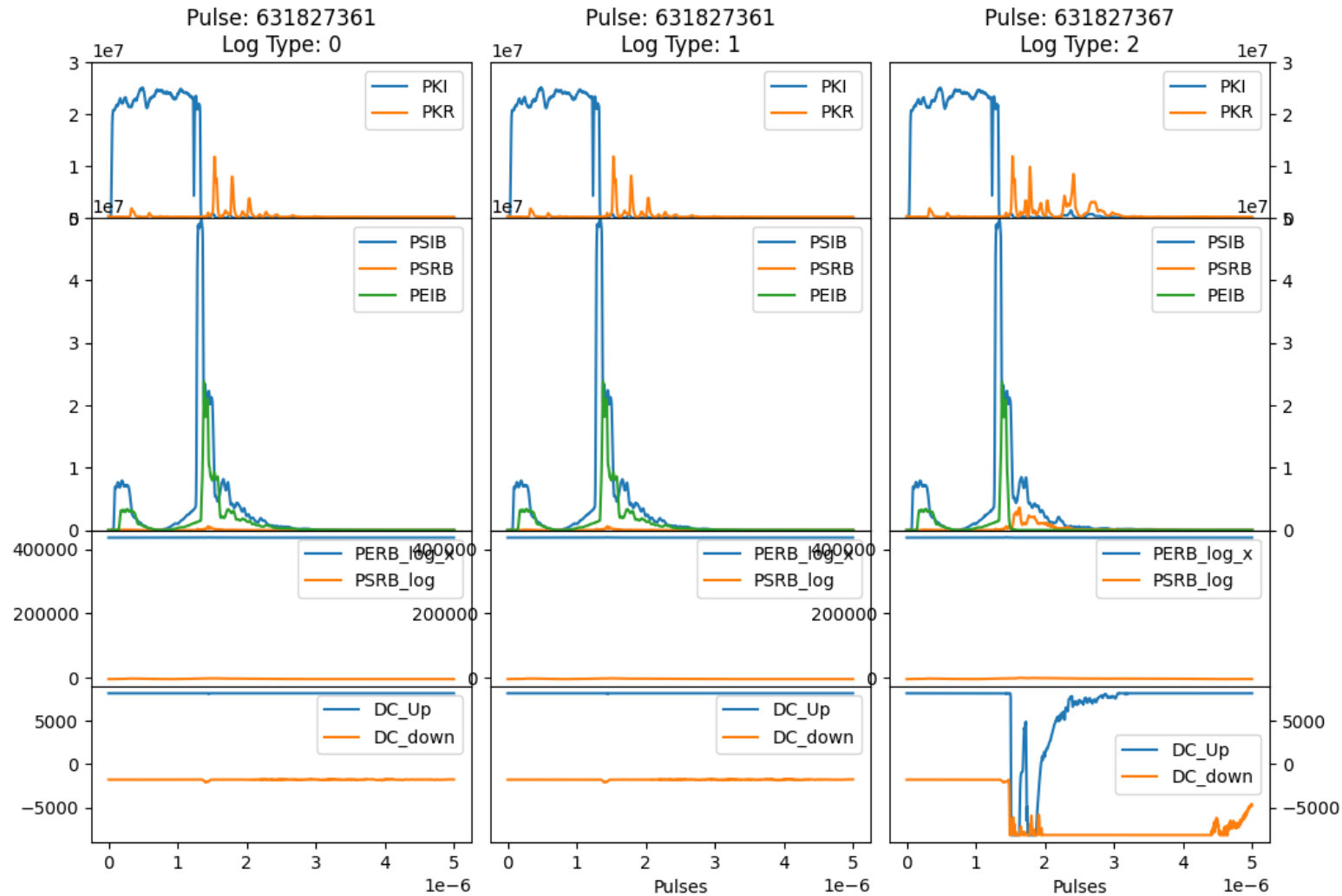




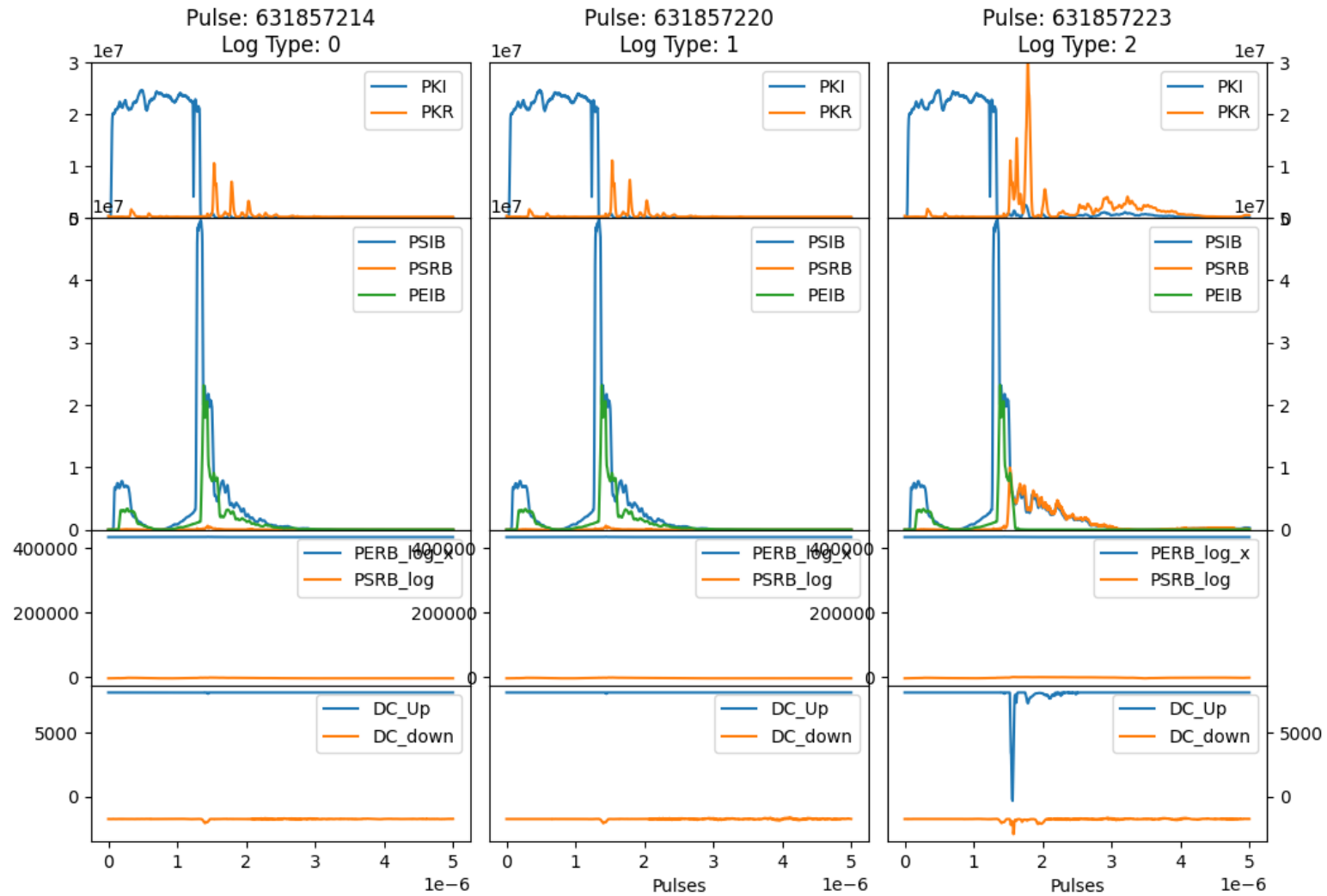
# TD31 N3 N4 Structure B- Pulses 18 October



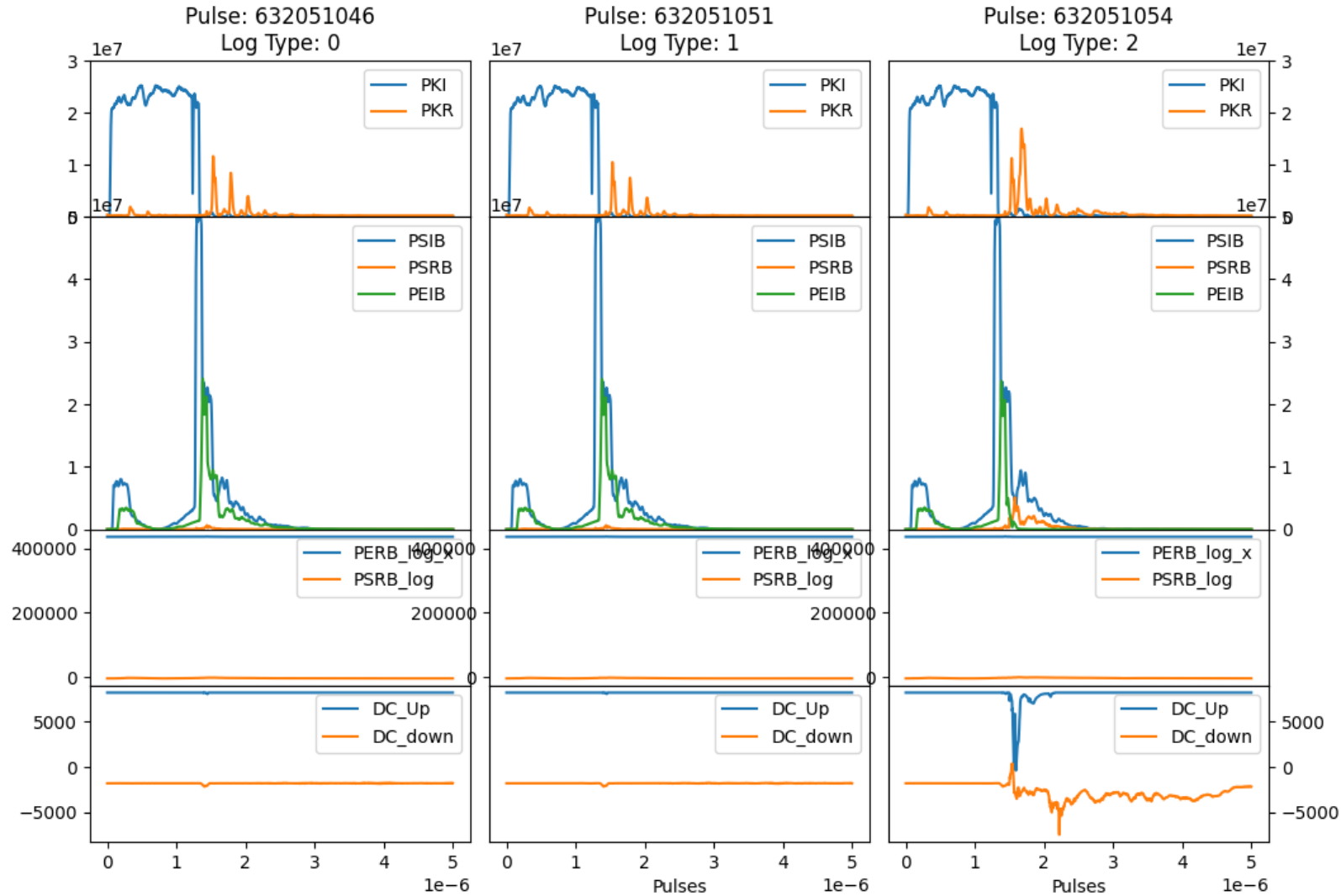
# TD31 N3 N4 Structure B- Pulses 18 October



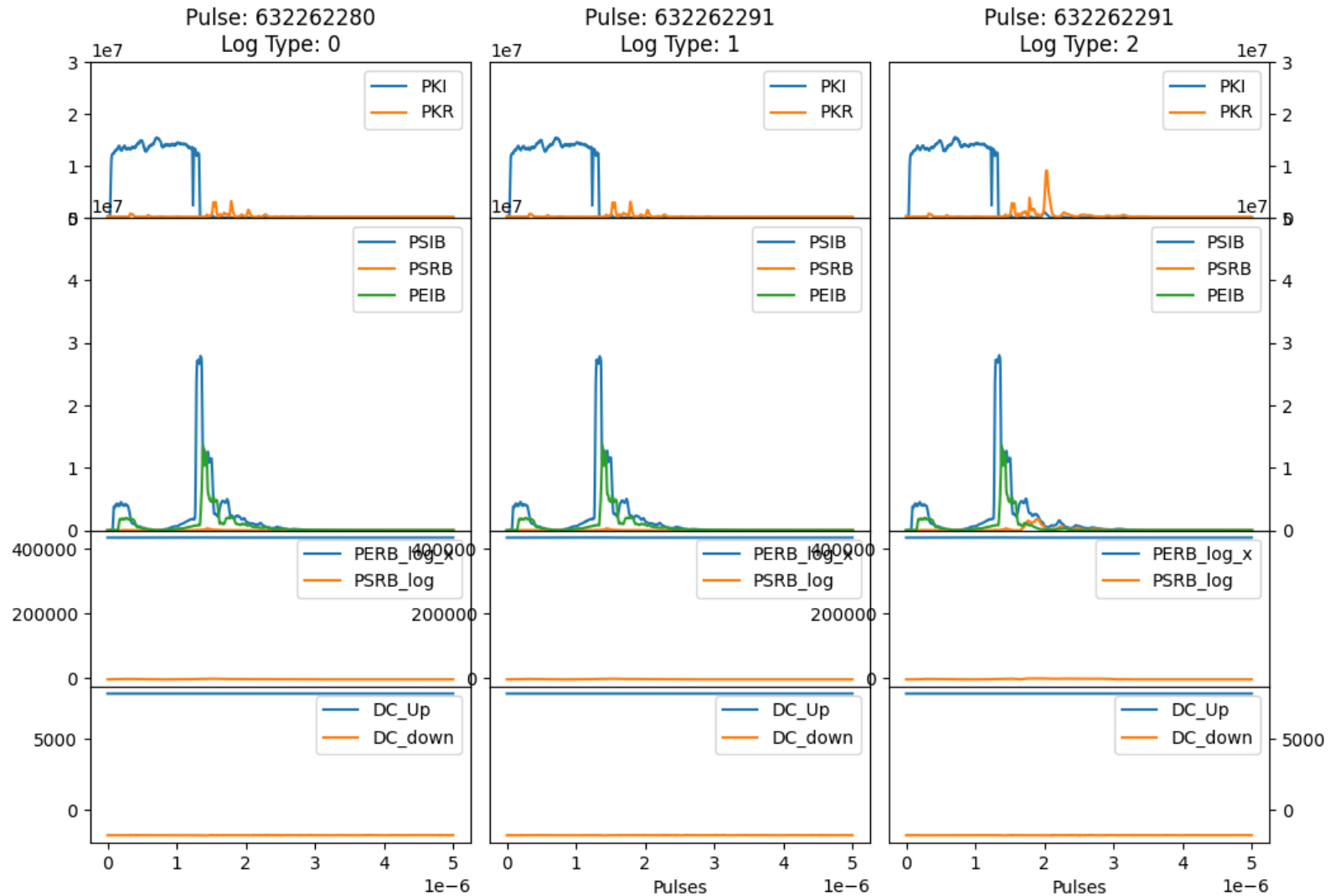
# TD31 N3 N4 Structure B- Pulses 18 October



# TD31 N3 N4 Structure B- Pulses 18 October



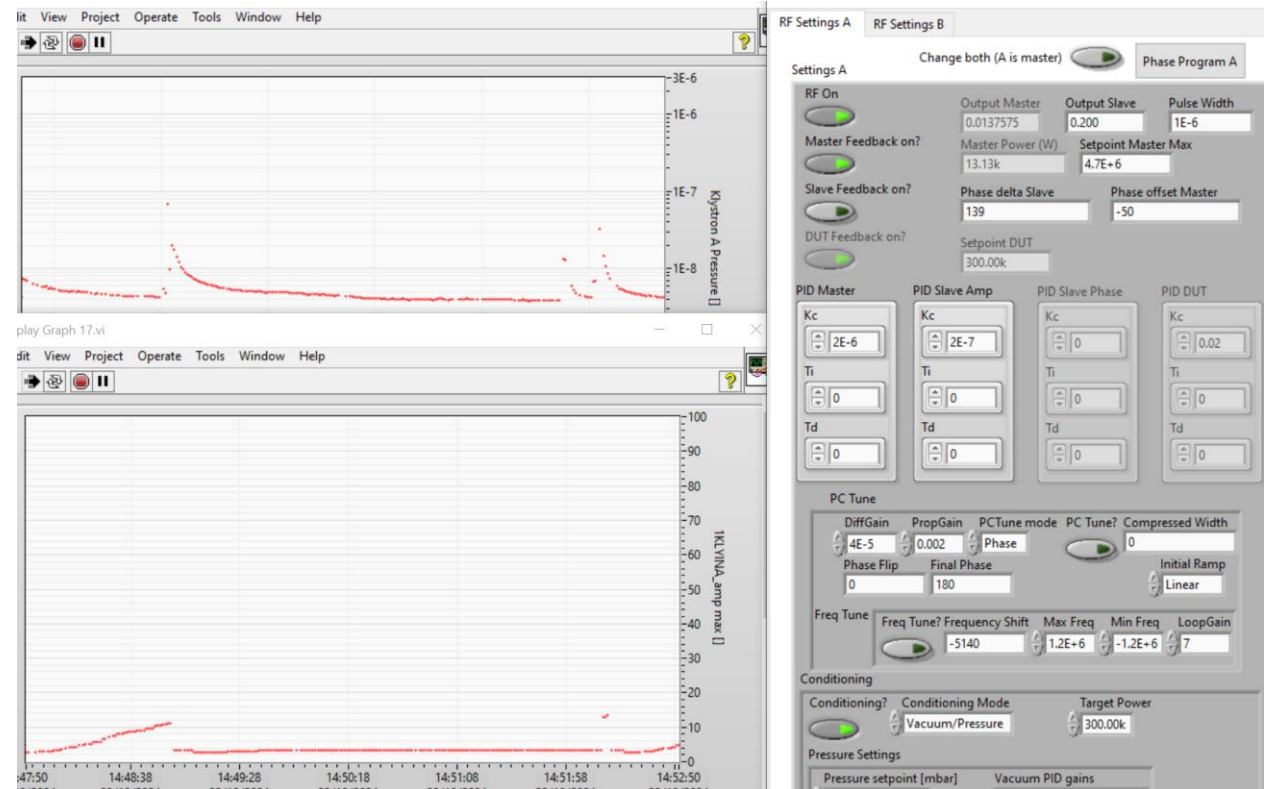
# TD31 N3 N4 Structure B- Pulses 19 October



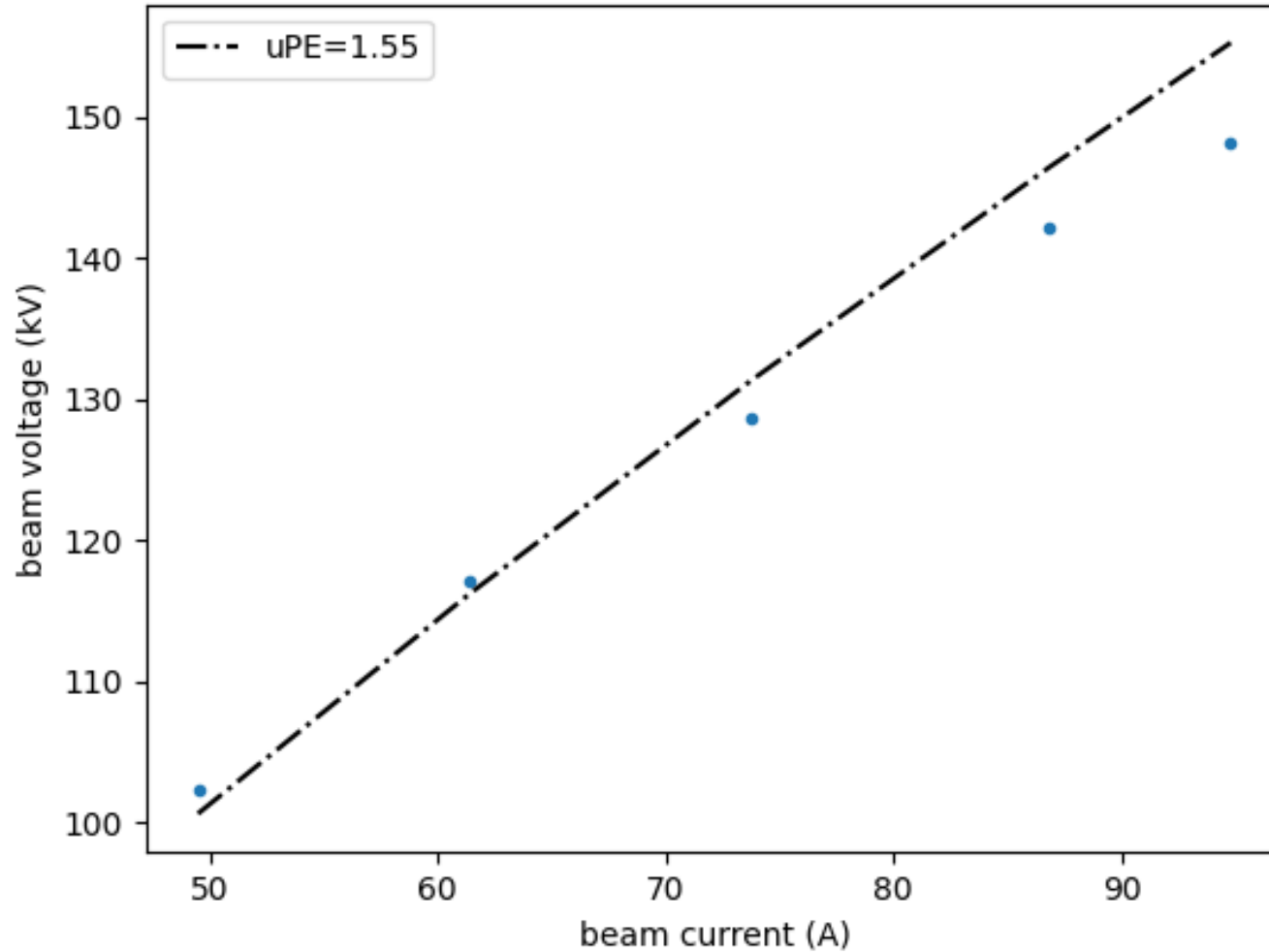
# X-Box 3: HEK measurements

- Vacuum is  $1.7E-7$ mbar  $\rightarrow$   $1E-10$ mbar
  - Broken valve
  - Connected primary group to pump
- Lines Drive, KLYFWD and KLYRFL have been recalibrated
- Visit from Scandinova
  - Calibrated calorimeter (custom made)
    - Flow meter not working (demineralized water)  $\rightarrow$  same FM
- Measurements in diode mode
  - Nice results, according to expected
  - Need to change PT1000 2-wires for PT100-4wires

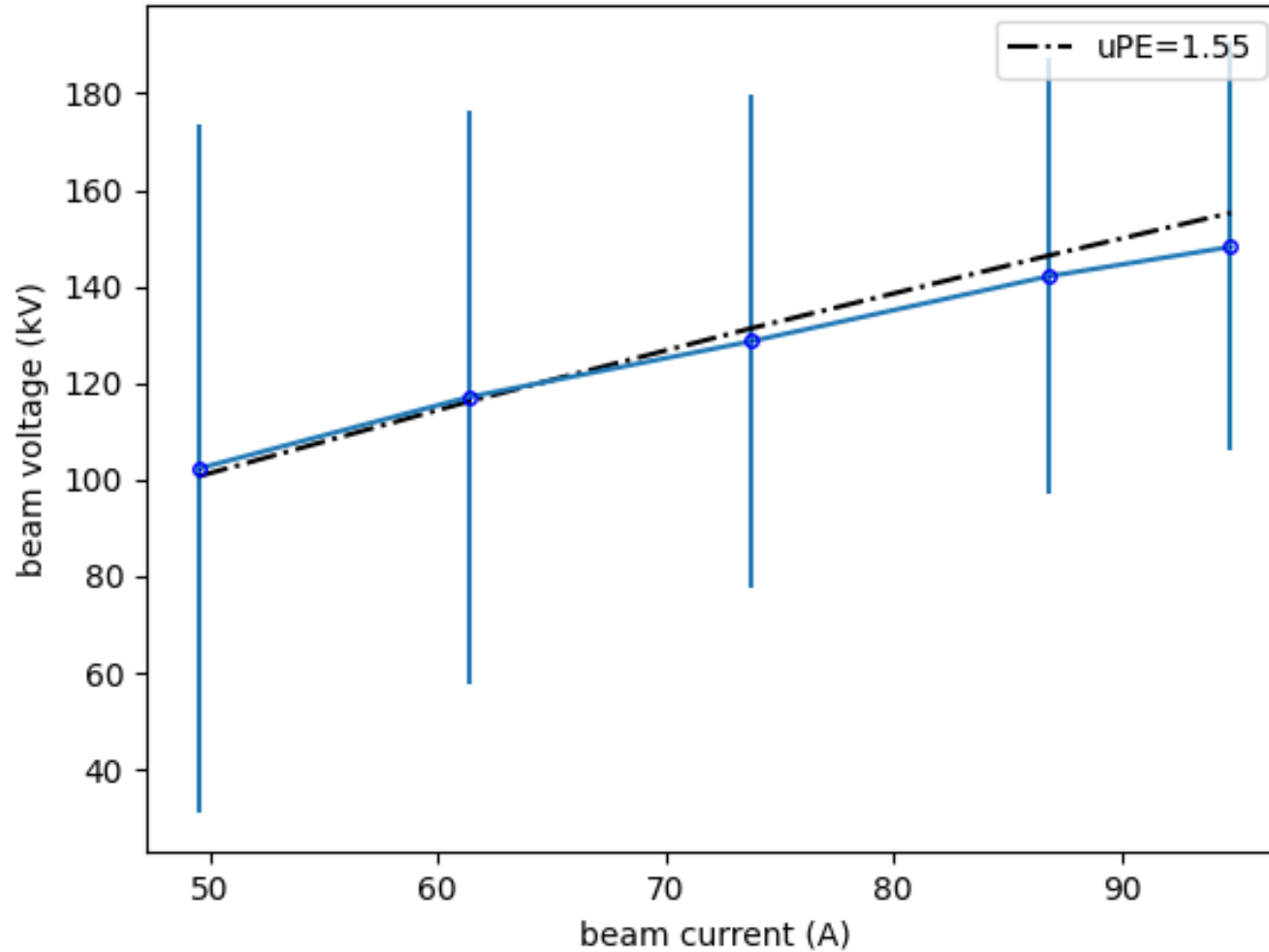
- In the meantime...
  - Conditioning the load (very slow)
  - Ordered PT100-4wires



# X-Box 3: HEK measurements



# X-Box 3: HEK measurements







[home.cern](https://home.cern)

# X-Box 2: Reminder on BD classification

