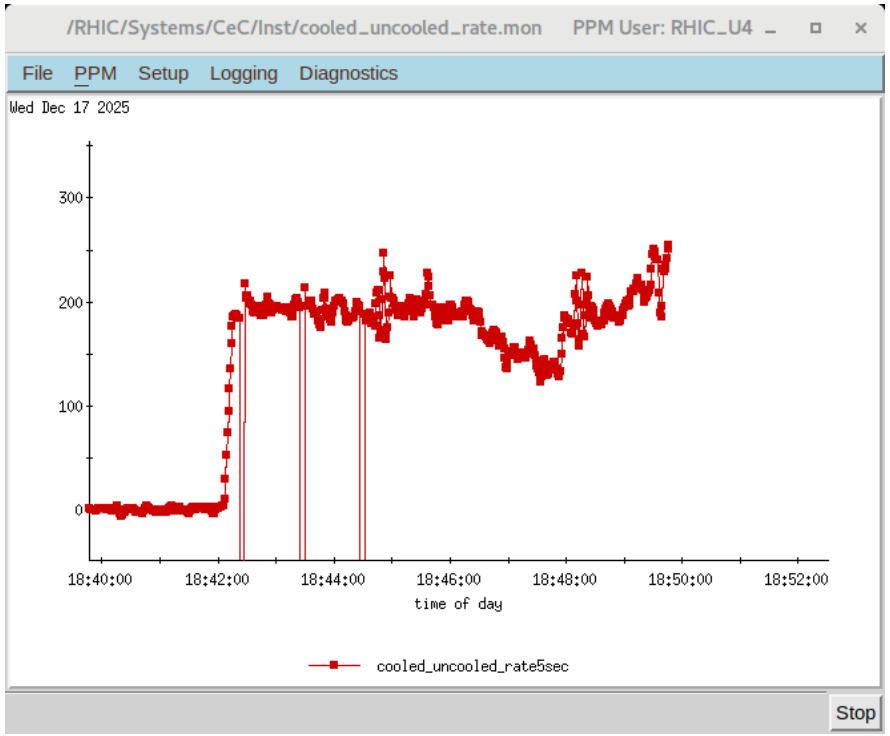
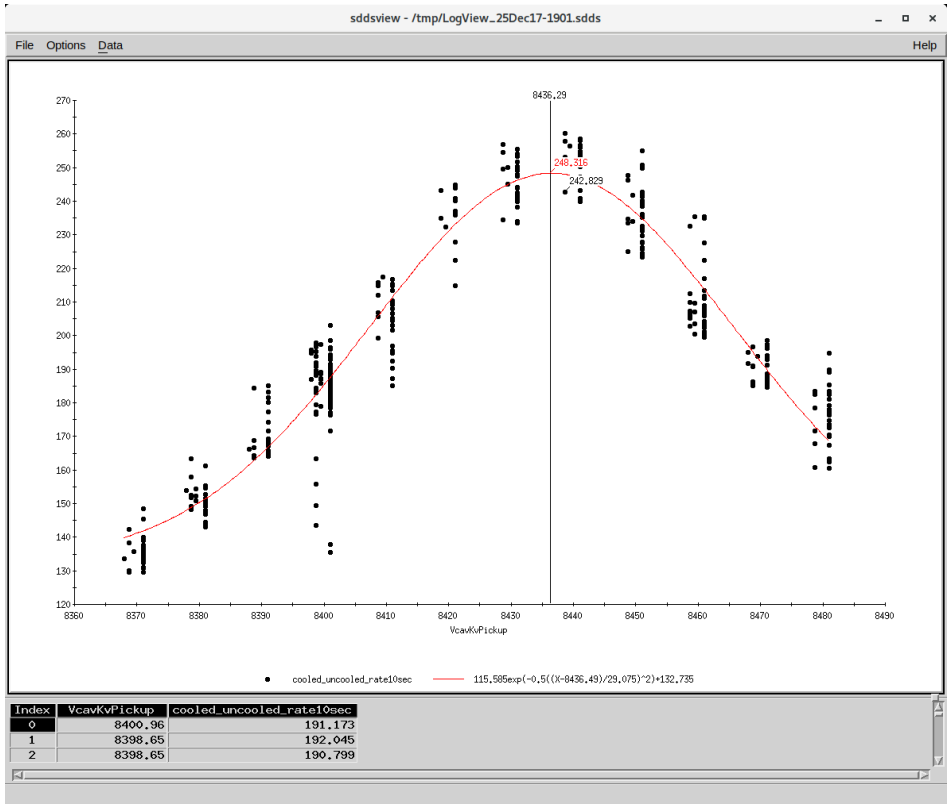
CeC status – 12/23/25

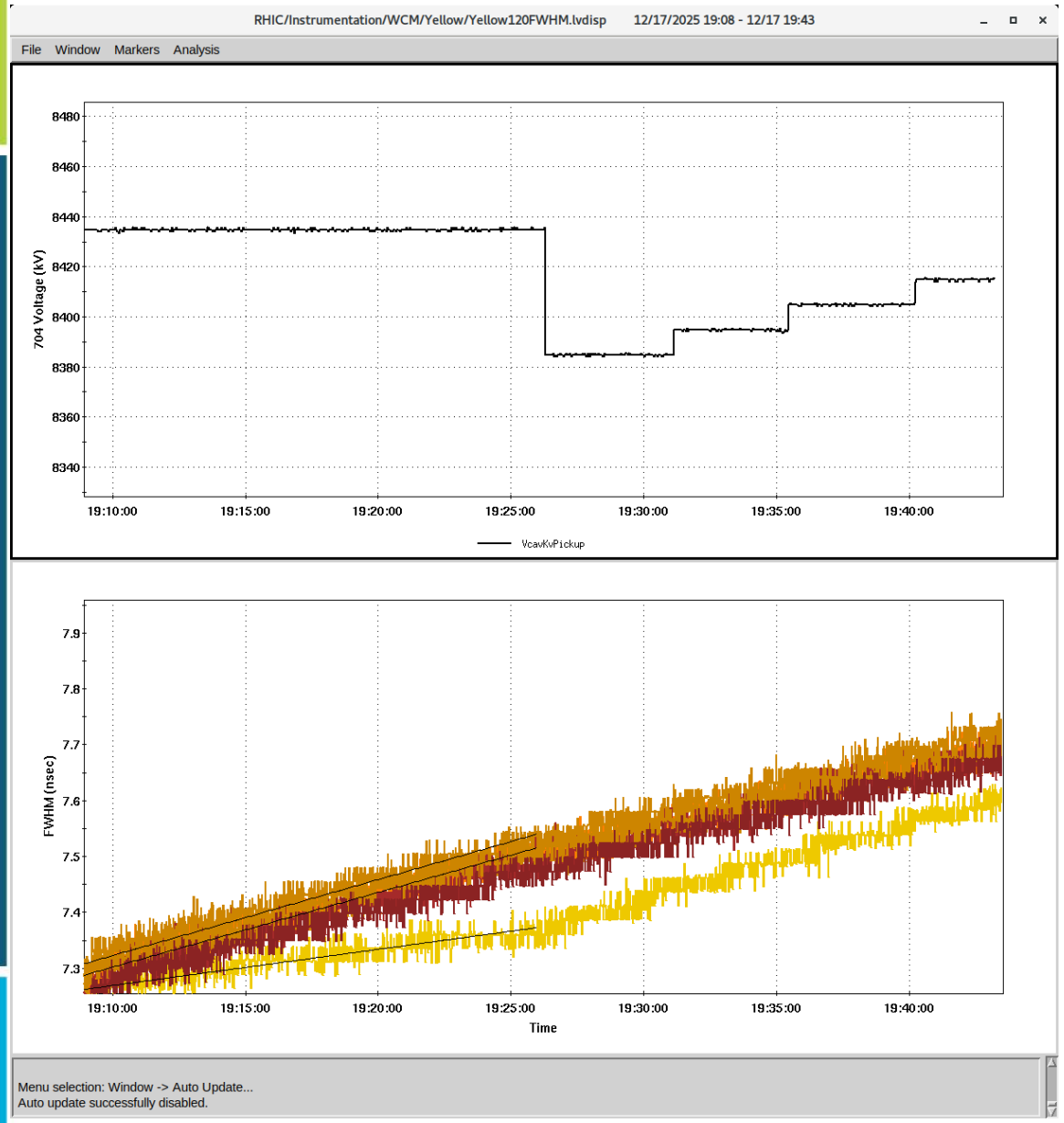
CeC APEX on Dec 17

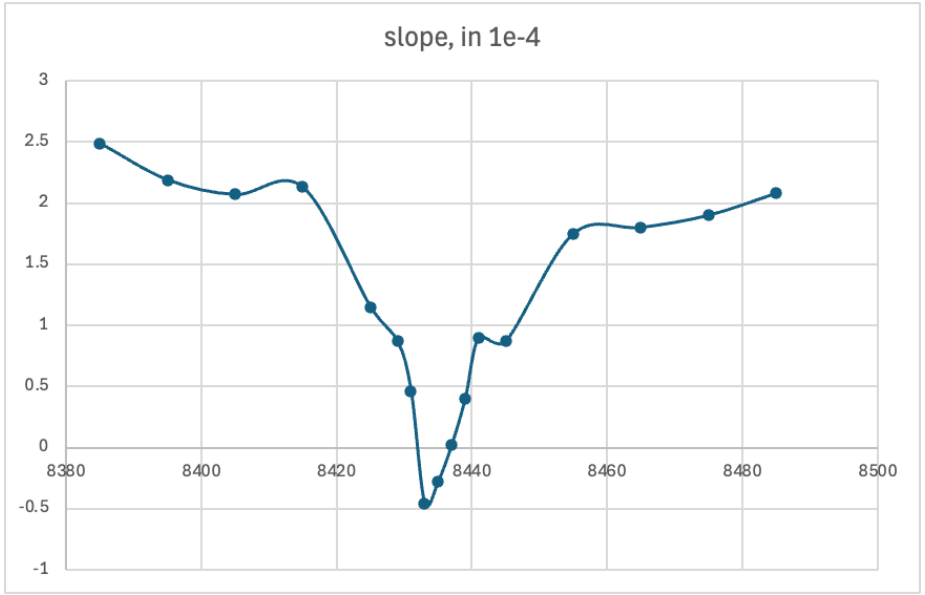




- Cables for recombination monitors were correctly connected.
- A local bump in the ion beam increased loss rate to ~ 200, which can be used to tune for match.
- The max recomb. rate is at ~ 8434 – 8436 kV by scanning of cavity's voltage.

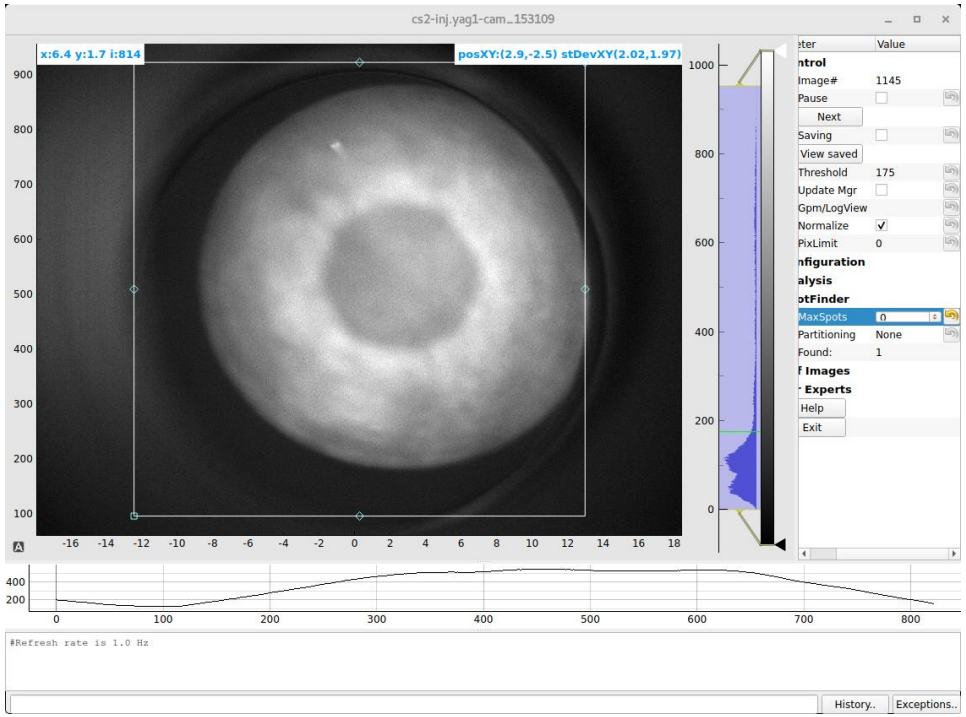
CeC APEX on Dec 17 cont'd – regular e- cooling

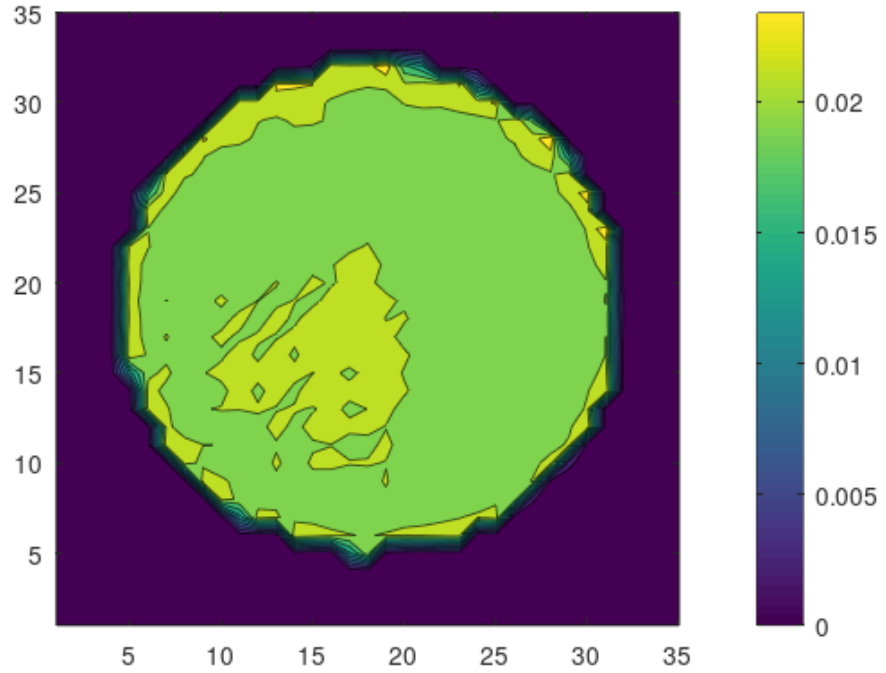




- Interaction of e- beam and ion beam is observed when comparing witness ion bunch and interacting ion bunch (which start at approx. equal intensity and bunch length).
- e- beam's energy was scanned to find optimal interaction point (calculate the growth/slope of FWHM of ion bunch).
- Regular cooling of 10 MeV beam is observed (negative slope of FWHM) and gives high precision of matching two beam's energy (~ 2 keV, i.e., 2e-4).

Cathode replacement on Dec 23rd





- Cathode (left) has significant QE loss after few hours of CW operation (from 0.35% to < 0.1%) in the region where laser spot is shining on.

- New cathode (right) is being swapped into the gun for next APEX session (QE degradation is negligible when not operating with CW beam from previous experience).