

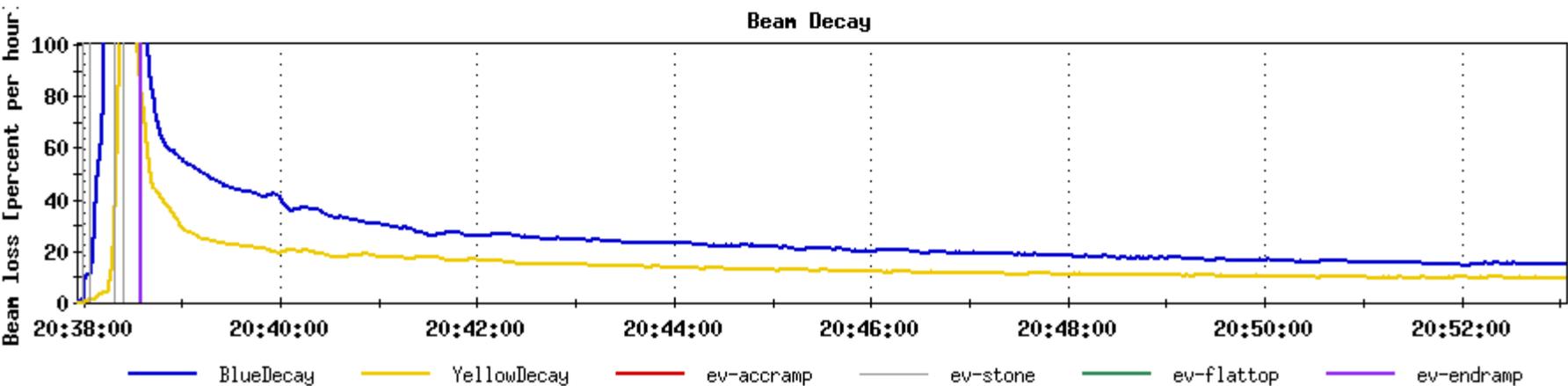
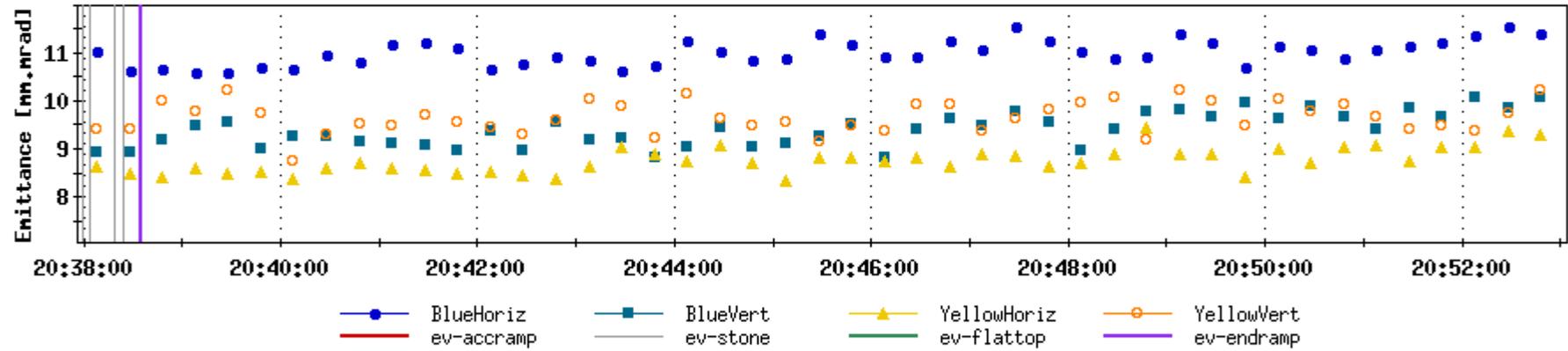
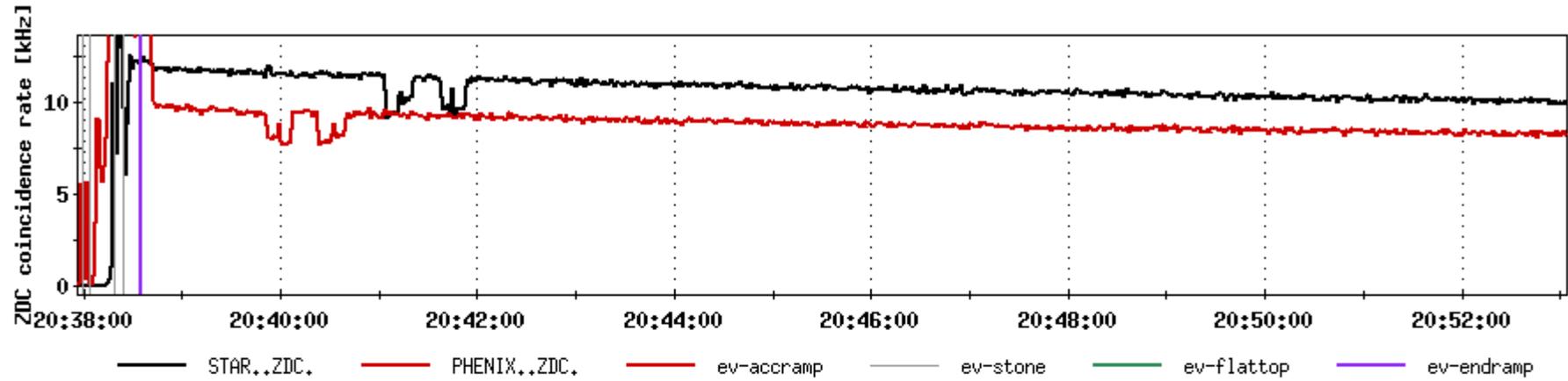
# **3Qy Resonance Stop-band Measurement**

Al, Wolfram, Yun

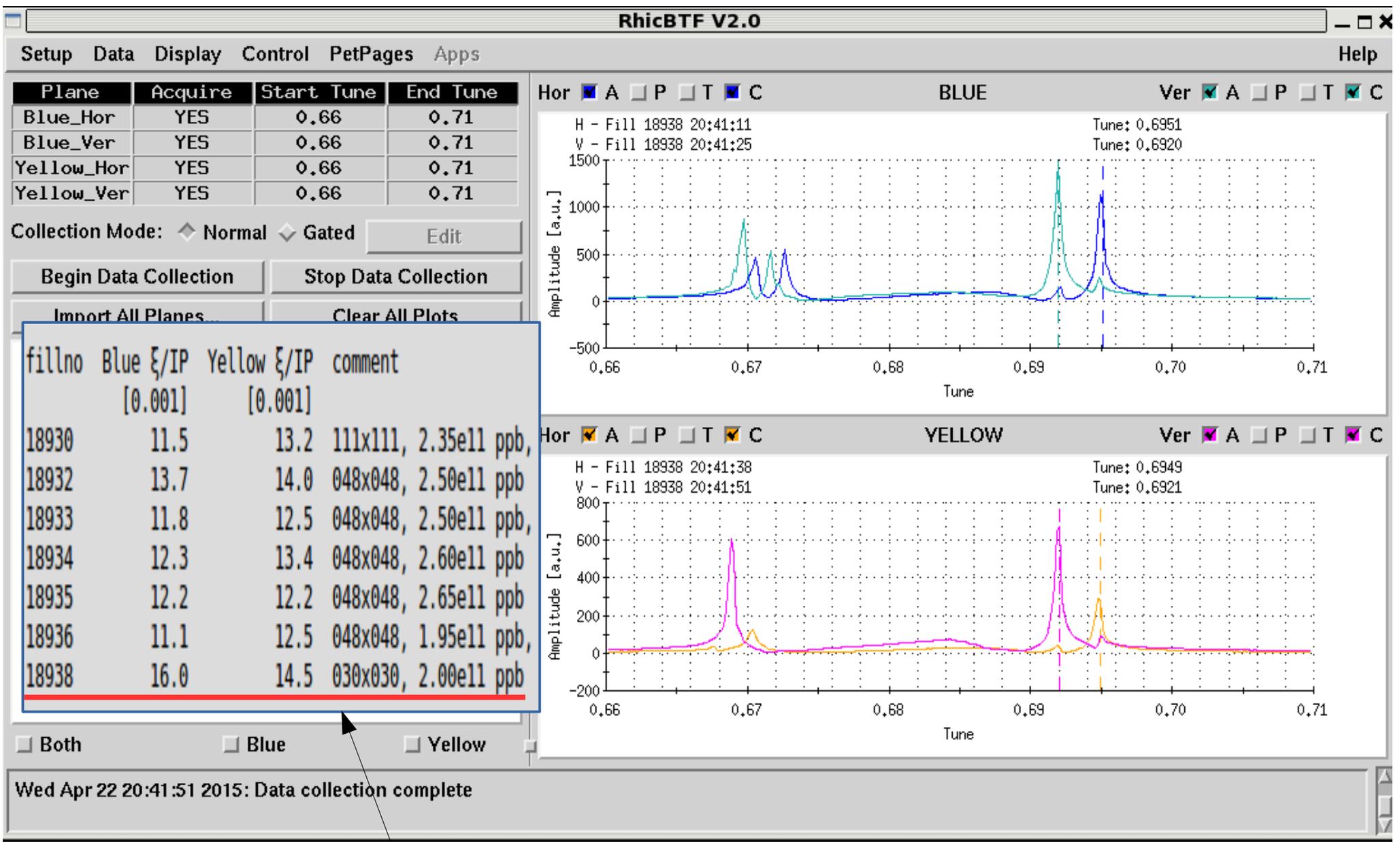
2014 April 22 APEX

# First Ramp: 18938

- 30\*30 bunches, normal physics ramp
- Bunch intensity 1.9e11
- Normal electron beam currents
- Normal store tune settings
- **Purpose:** pushing working point toward 7/10 and 2/3 to measure the resonance stop-bands with electron lenses



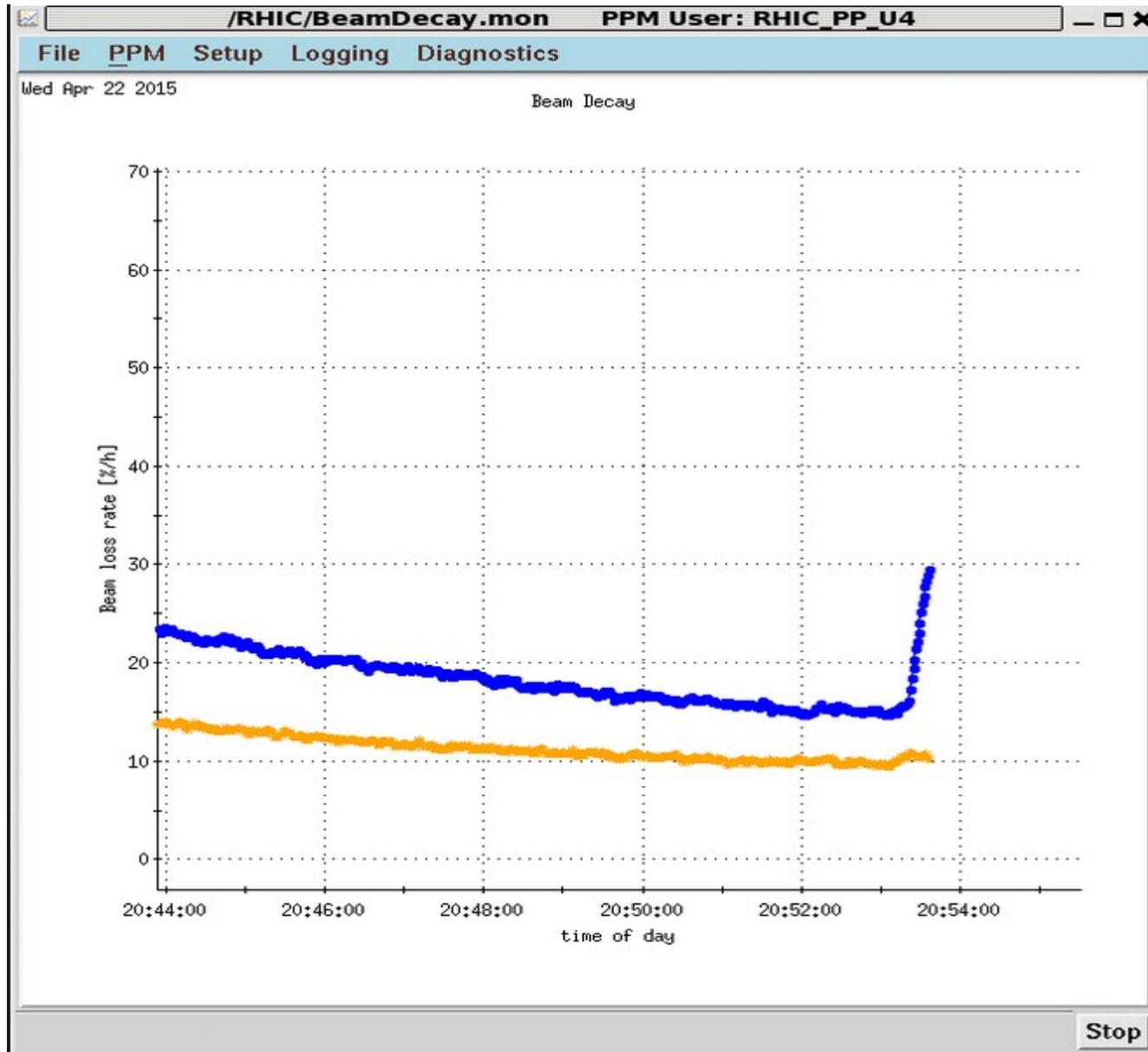
# BTF measurement at store:



From StoreAnalysis (Wolfram)

## Tune scan in Blue towards 7/10:

Even 0.0005 increase caused a visible large beam decay  
Which means tune spread already touch upper limit

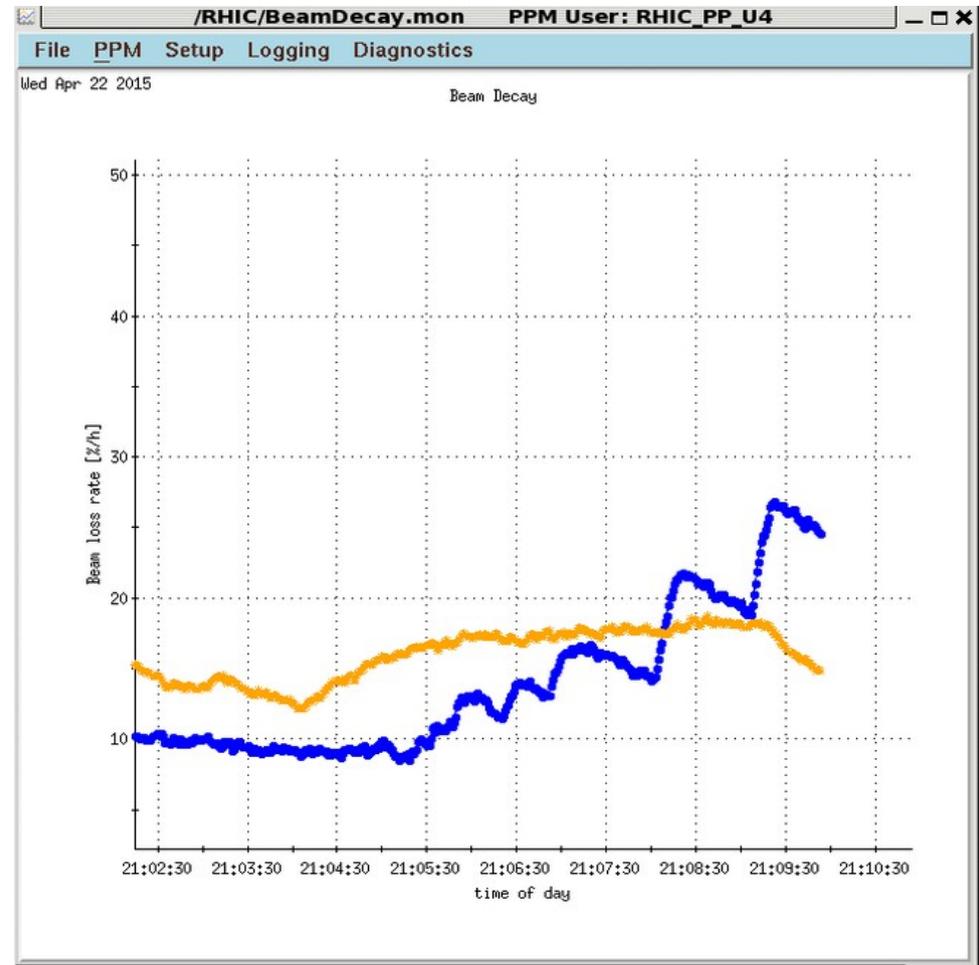
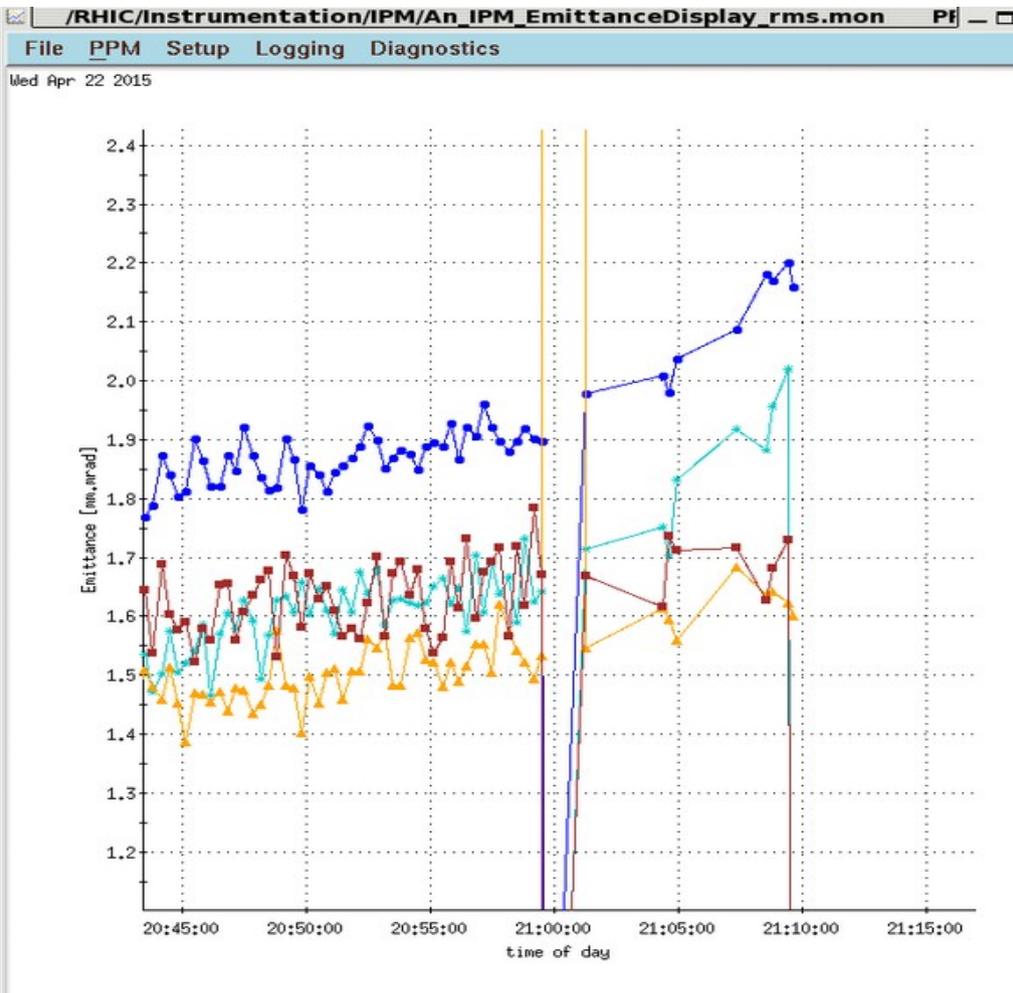


## Tune scan in Blue towards 2/3:

The start tunes at 0.684 from schottky

Tunes down 0.003 we observed emittance blowup in Blue only

Previous tune scan without BB compensation, we saw emittance blowup when the tunes down to 0.680 from schottky.



# Summary

- When the tunes down to 0.680-0.681, we observed emittance blowup with/without BB compensation.
- The emittance blowup was due to  $2/3$  resonance stop-band, instead of coherent BB motion.
- Currently we used up the tune space even with BB compensation. Larger BB compensation is required to avoid emittance blowup.