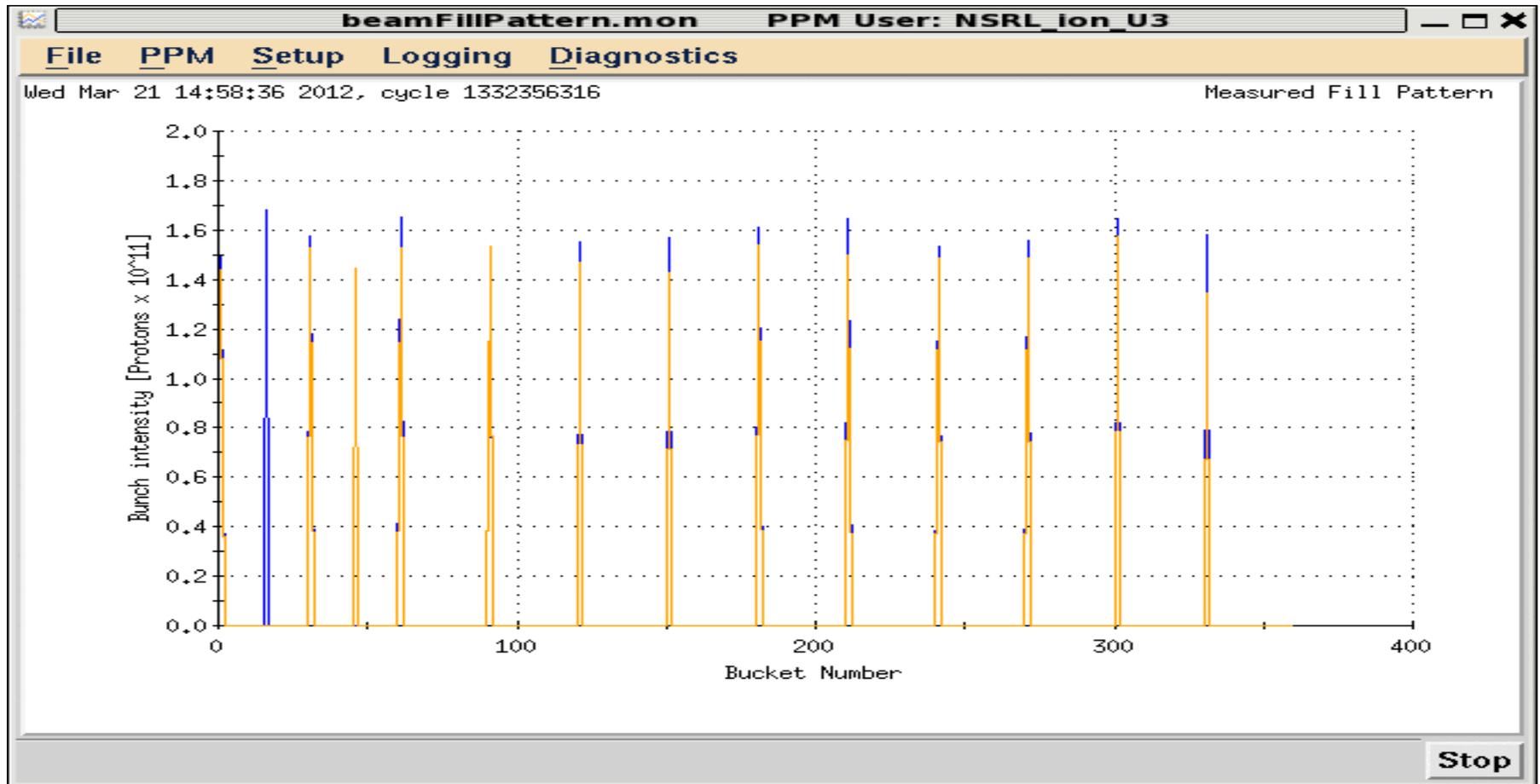


Coherent Modes

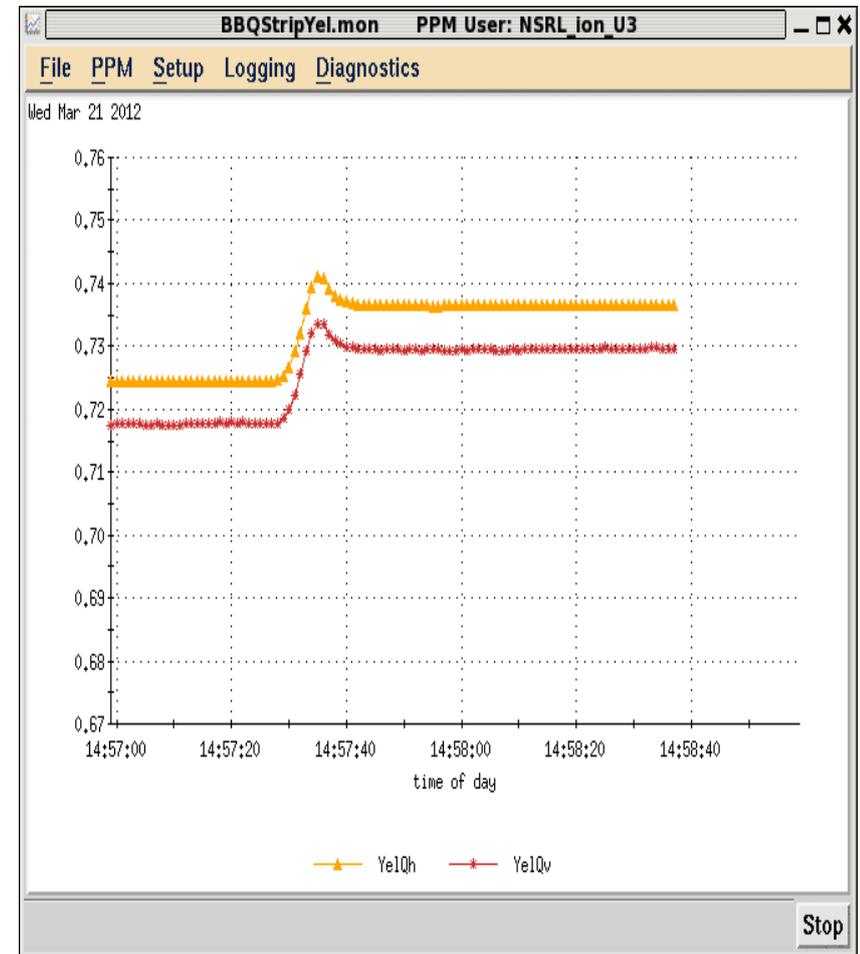
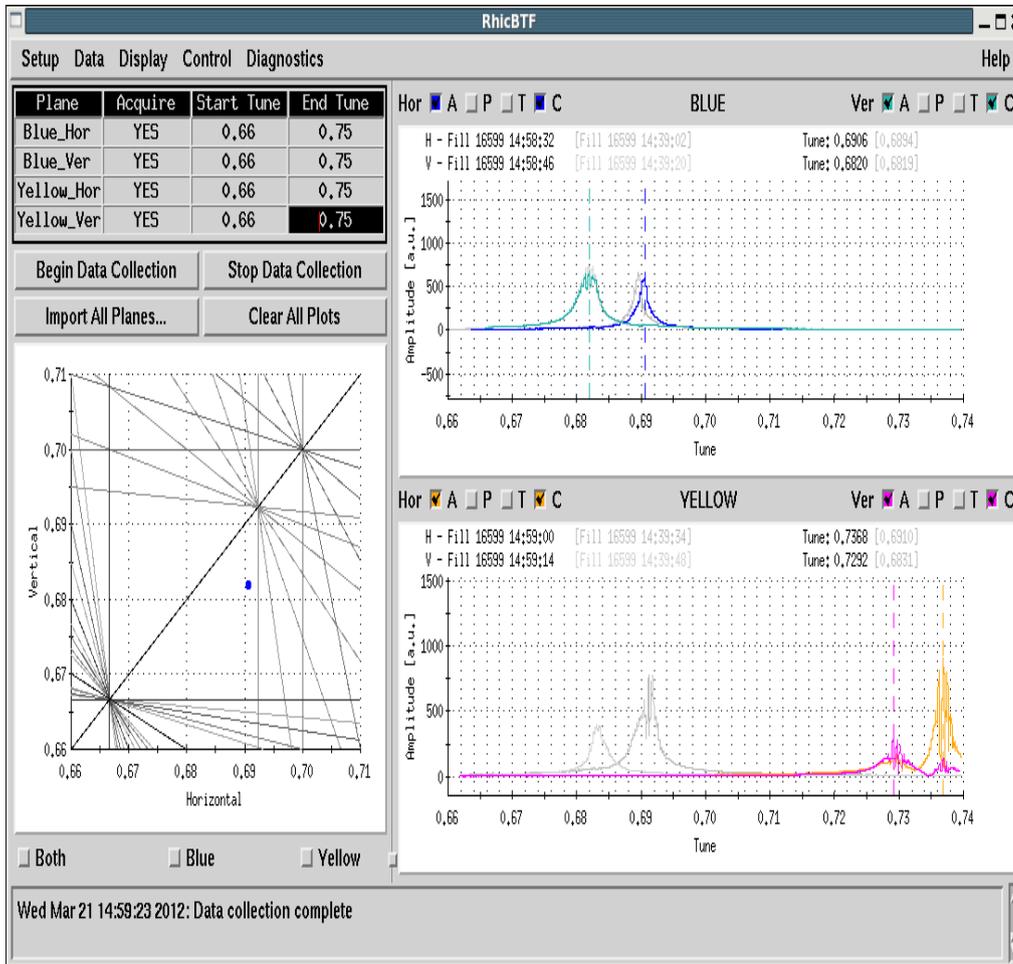
- 3h hours in the schedule – investigate impact of coherent modes and difference between horizontal and vertical plane
 - Lost 2h due to power supplies issues
 - Had time to bring up one ramp in the last hour – decided to repeat the split tune experiment
 - Test bunch-by bunch emittance measurements with polarimeters

Filling scheme



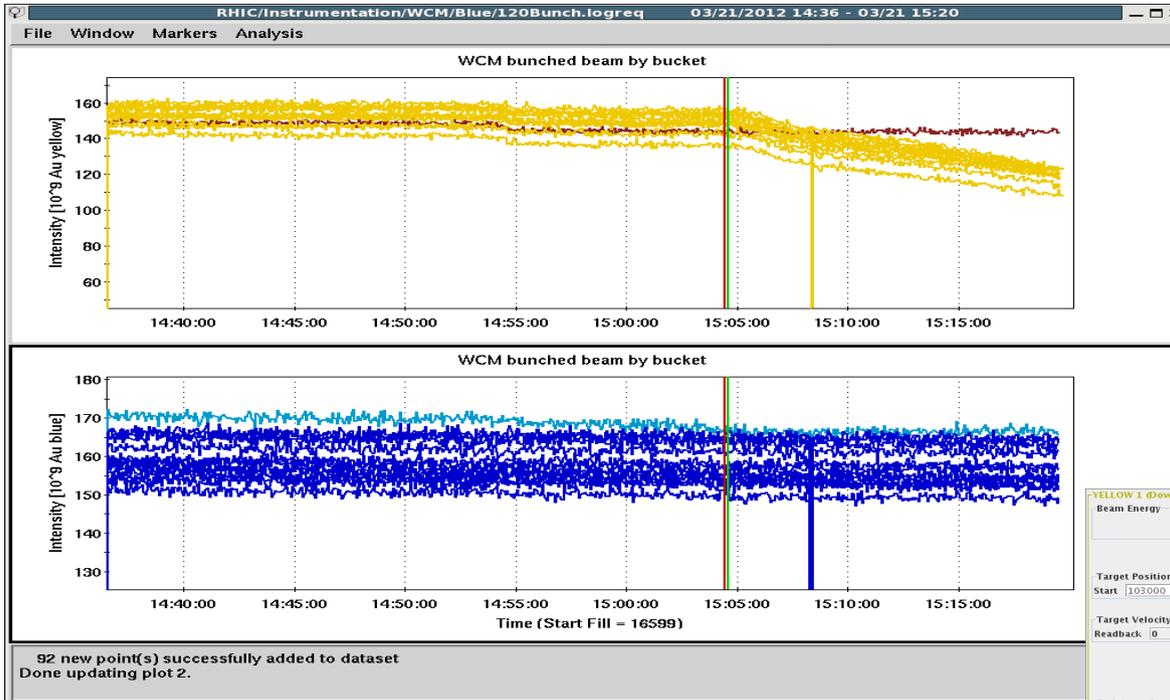
Added one non-colliding bunch to a regular 12x12 pattern: proved to be very useful

Tunes



Ramped the beams on nominal tunes and move yellow above 0.7 at the end of the energy ramp
 Hit power supply limits trying to move the yellow tunes up – issue for integer W.P.?

Emittance & Losses



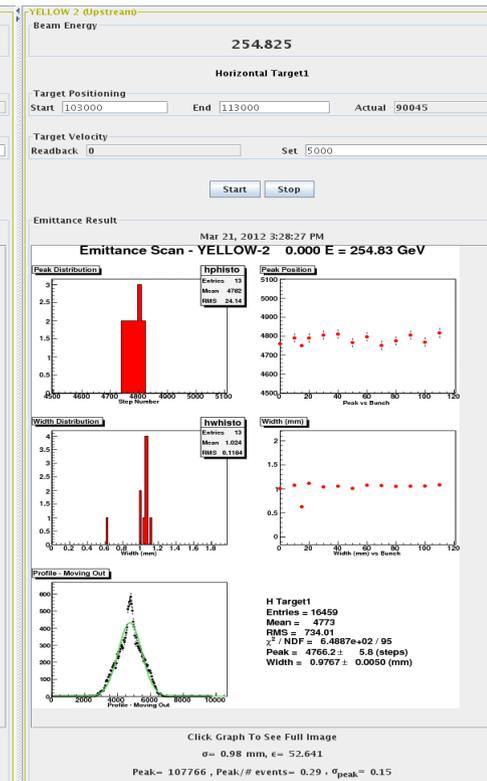
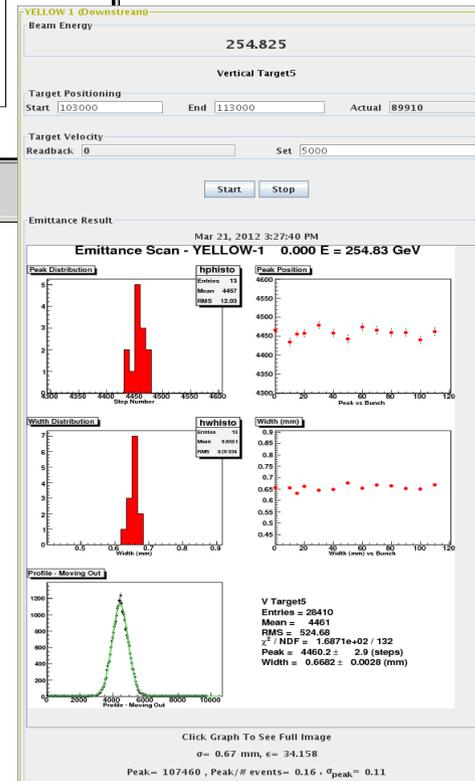
Observed high losses in yellow
except for the non-colliding bunch

Blue beams sees no significant losses

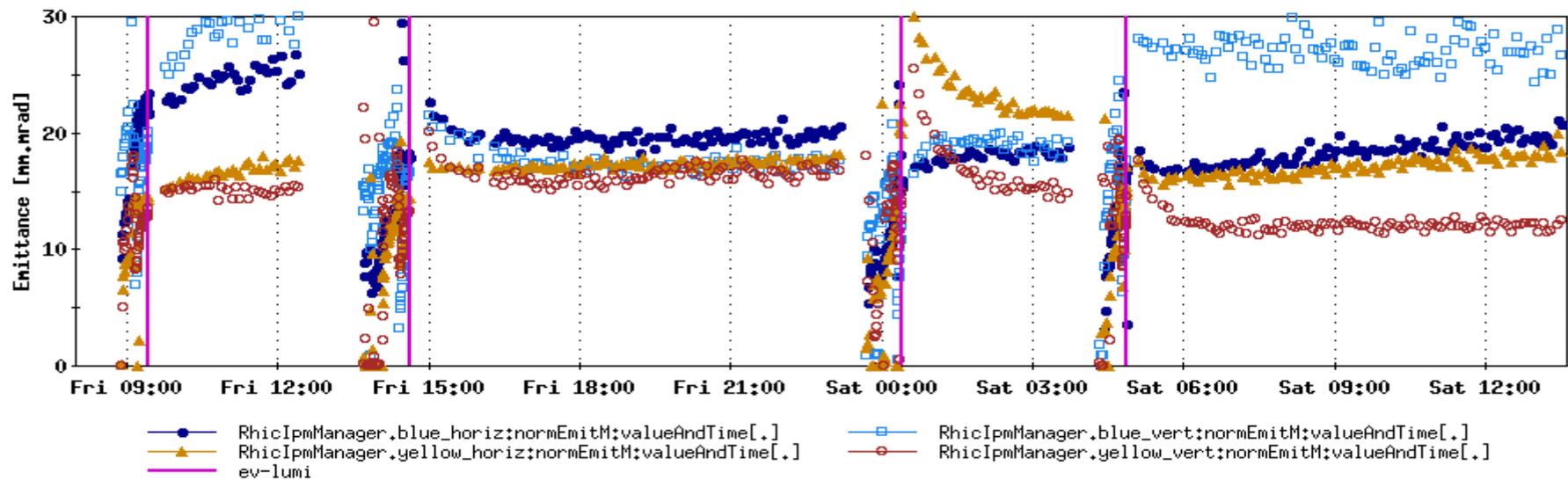
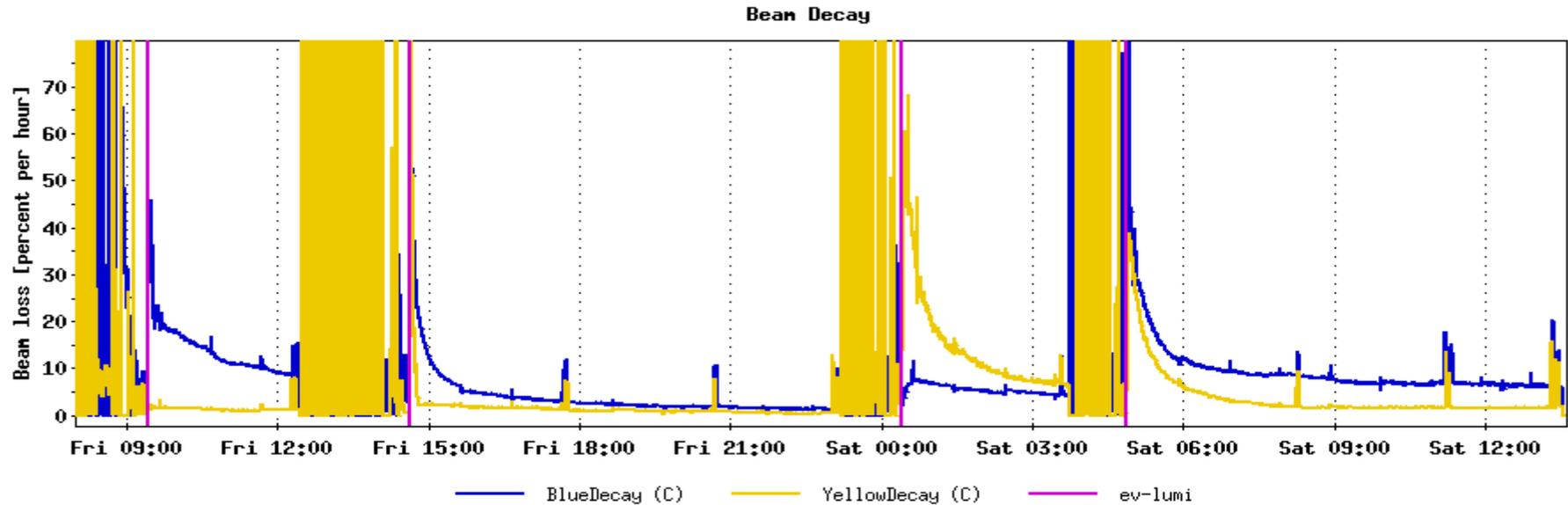
Losses in yellow associated with large
emittance blow up

Bunch-by-bunch emittance measurements
shows that the non-colliding bunches
does not blow-up

Beautiful data! Would it be possible to save
a target for future experiments?



Past observations



Preliminary conclusions

- Collisions with split tunes seemed very promising at first but:
 - Systematic emittance blow-up observed – only one fill over 5 made it
 - Colliding beams with split tunes seems rather tricky to operate and is probably not suited for production
 - Simulations and detailed analysis is required to understand the mechanism that blows-up the emittance – clearly due to beam-beam interactions
- We have enough data regarding coherent modes suppression with split tunes
- We need to focus on understanding the absence of coherent modes in the horizontal plane and see if this could be applied to the vertical plane → 2h next week (if ready) : 10Hz orbit modulation – coupling W.P.