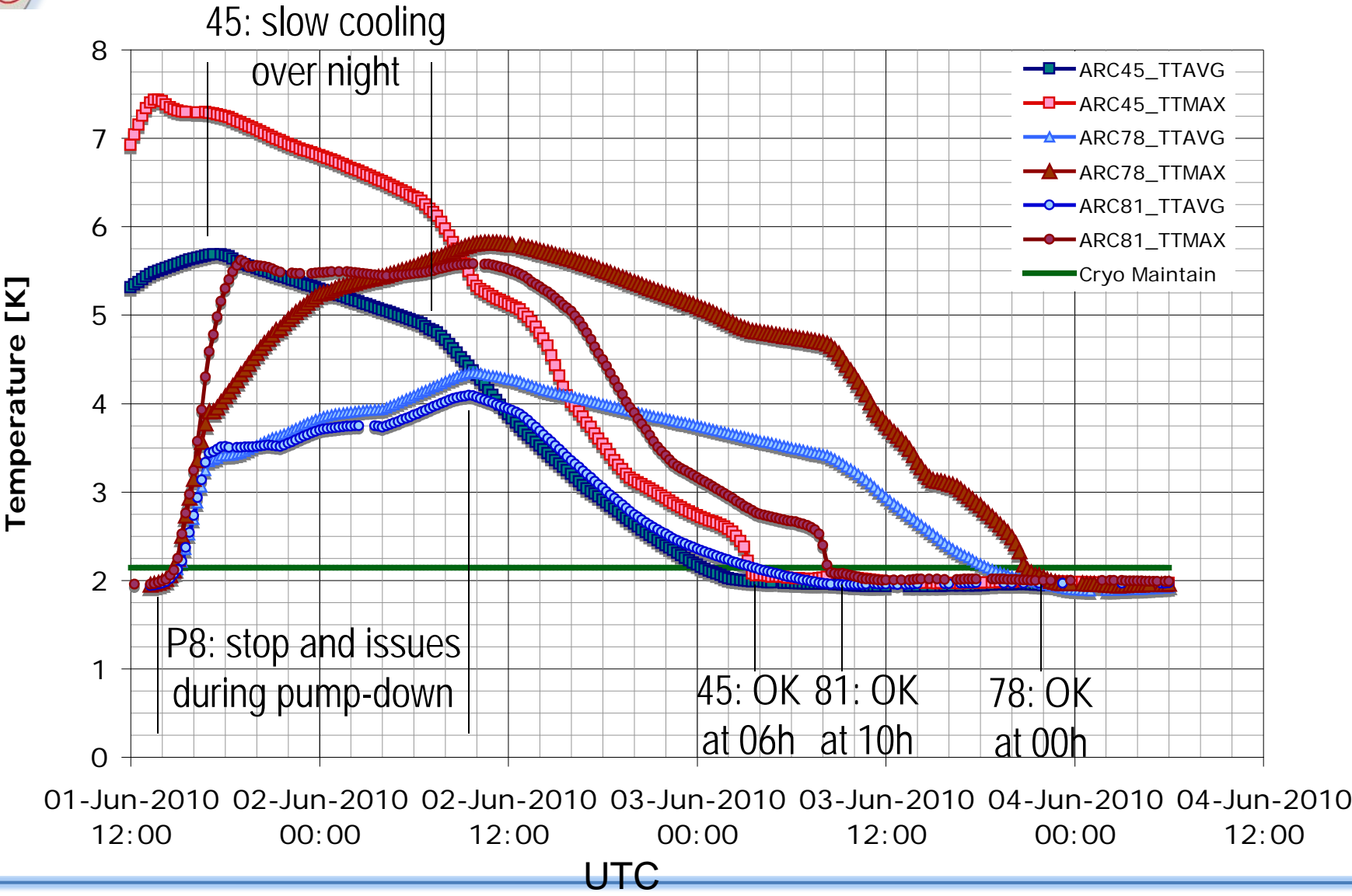


- Main aim: recover physics conditions with 13 bunches and 2×10^{10} p/bunch after the technical stop + progress for the commissioning of the transverse feedback

Week 22	
Mon 31/5 - Wed 2/6	Technical stop
Thu 3/6	Recovery of cryogenics conditions in 3 sectors (45/78/81) 30 hours after the end of the technical stop. Test of the RB energy extraction system after modification to allow operation to 10 A/s and pre-cycle tests with 10 A/s
Fri 4/6	Debugging of the ramp with single bunch Verification of the machine protection after technical stop
Sat 5/6	First physics fill with 13 b - 2×10^{10} p/bunch Struggling with orbit feedback
Sun 6/6	Re-qualification of the ramp and squeeze with lower intensity UPS problem in UA83 preventing ramps

Cryogenics recovery (S. Claudet)





Cryogenics recovery (S. Claudet)

- **P4:** Long intervention on Tuesday (PLC, reconnection) leading to delicate tuning in the evening (10 hours lost)
 - **P8:** Unforeseen stop of Cold Compressors Tuesday 16h (false contact in a connector during a scheduled intervention for instrumentation), with add. stop Wed. at 6h due to sc level gauge with false signal
 - New procedures will be put in place for cryo-interventions during technical stops to guarantee cryo-availability immediately after the technical stop
-

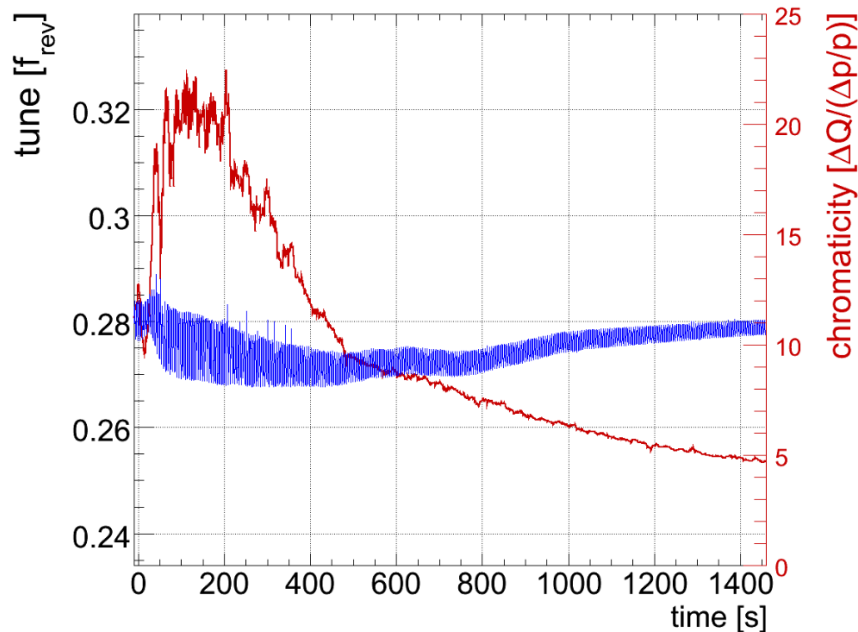
QPS for the main circuits

- Tests of the QPS after modification of the energy extraction system successful in all sectors
 - All sectors but sector 78 tested with ramp rates of 10 A/s up to 6 kA in the shadow of cryogenics recovery. Sector 78 re-qualified for operation to 2 A/s because of lack of time
 - Pre-cycle at 10 A/s tested on all sectors but S78 and S45
 - Commissioning time required to set-up the ramp with 10 A/s with beam
-

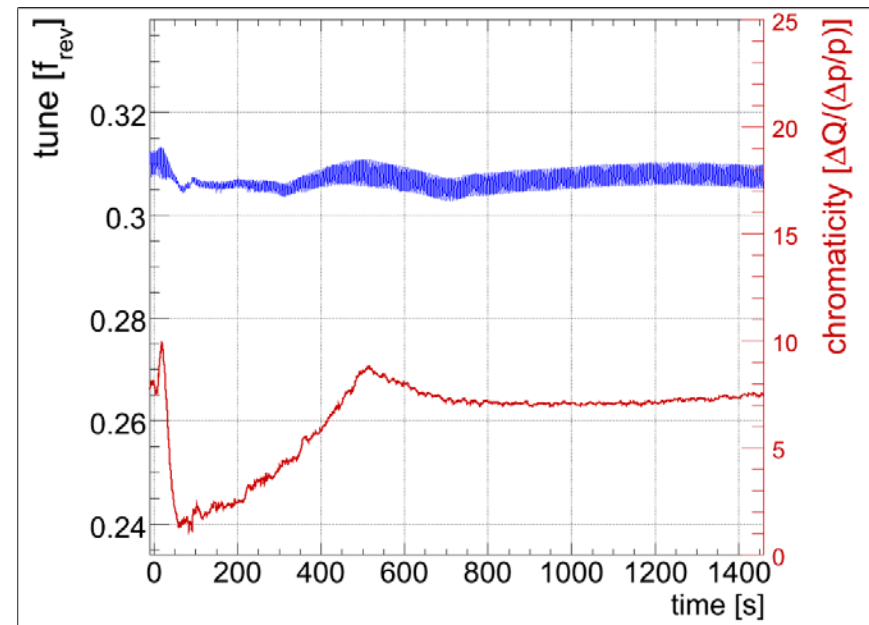
Re-qualification of the ramp

- Chromaticity measurements during the ramp - Data analysed by Ralph Steinhagen.

- Hor.



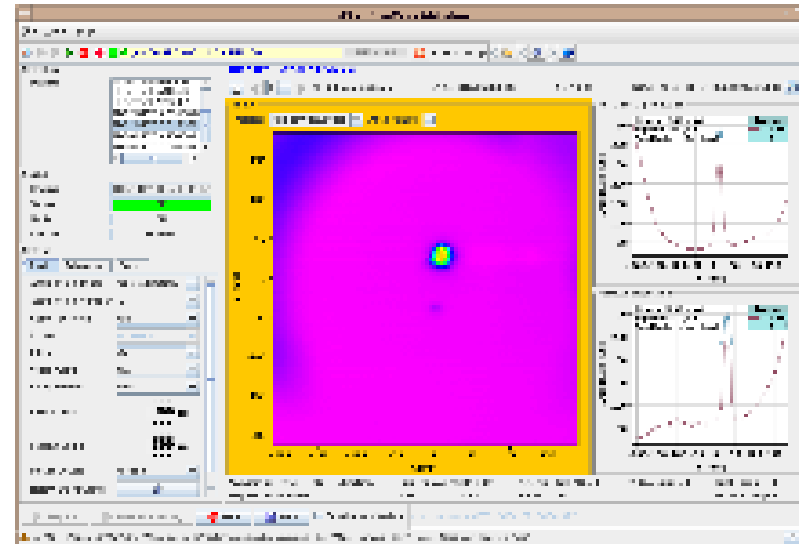
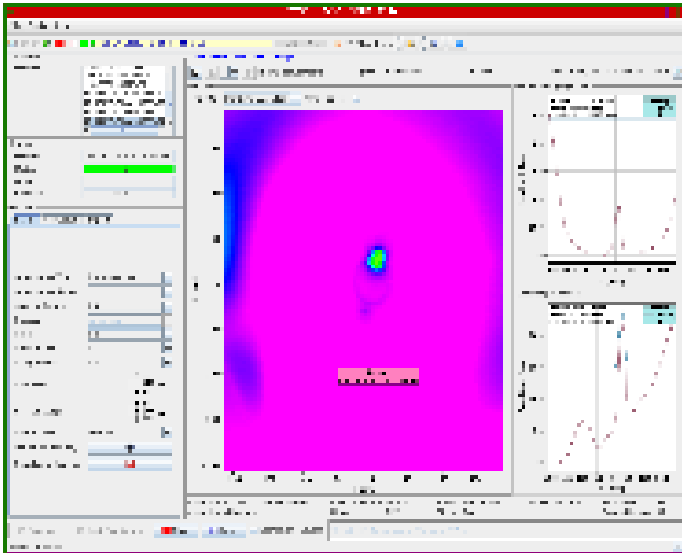
- Vert.



- Correction applied to the beginning of the ramp

Re-qualification of the protection systems

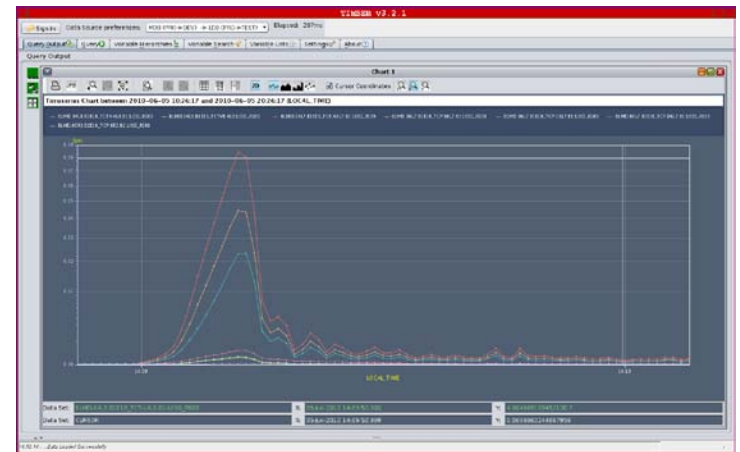
- Dump at 450 GeV for LBDS re-qualification and at 3.5 TeV
- Dump check at 3.5 TeV (beam position on BTVDD is fine - Jan Uythoven).



- Loss maps measurements done : settings validated for stable beams
- Asynchronous beam dump with $1e11$
- In the shadow, some transverse damper commissioning

Problems

- Established stable beams with 13 bunches 2×10^{10} p/bunch but not for long period (3 hours) on Saturday.
- Lost ~25% of B1 intensity while doing the mini-scan in IP8 Luminosity scan application subscribing to old LSA version with a bug → separation bump correctors strength to zero
- Fixed and tested

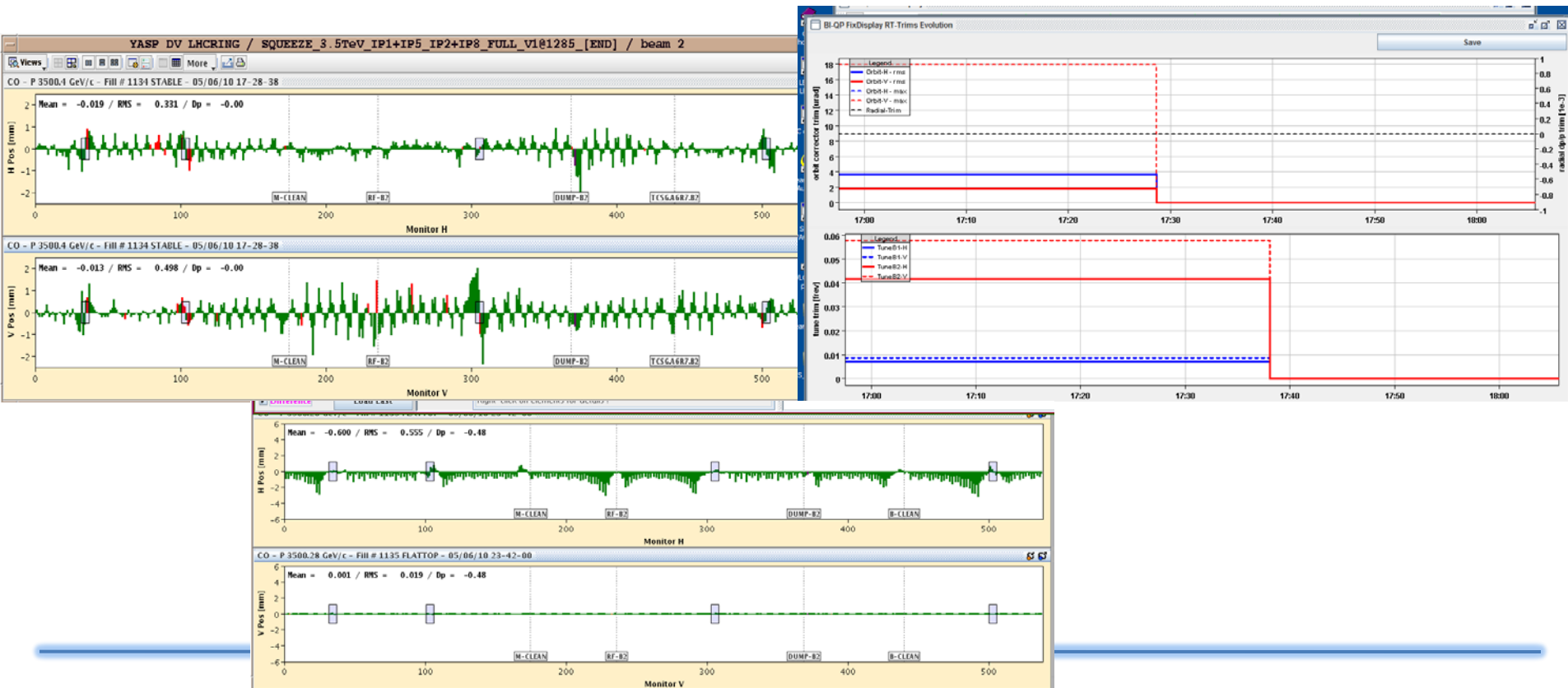



- Losses caught by the collimators in LSS7 but could be serious with high intensity → **Need more thorough SW testing before deployment**

Problems

Orbit feedback has still an unpredictable behaviour when OFF:

- Reference going to zero suddenly during physics coast
- Correcting during momentum scan for chromaticity measurement

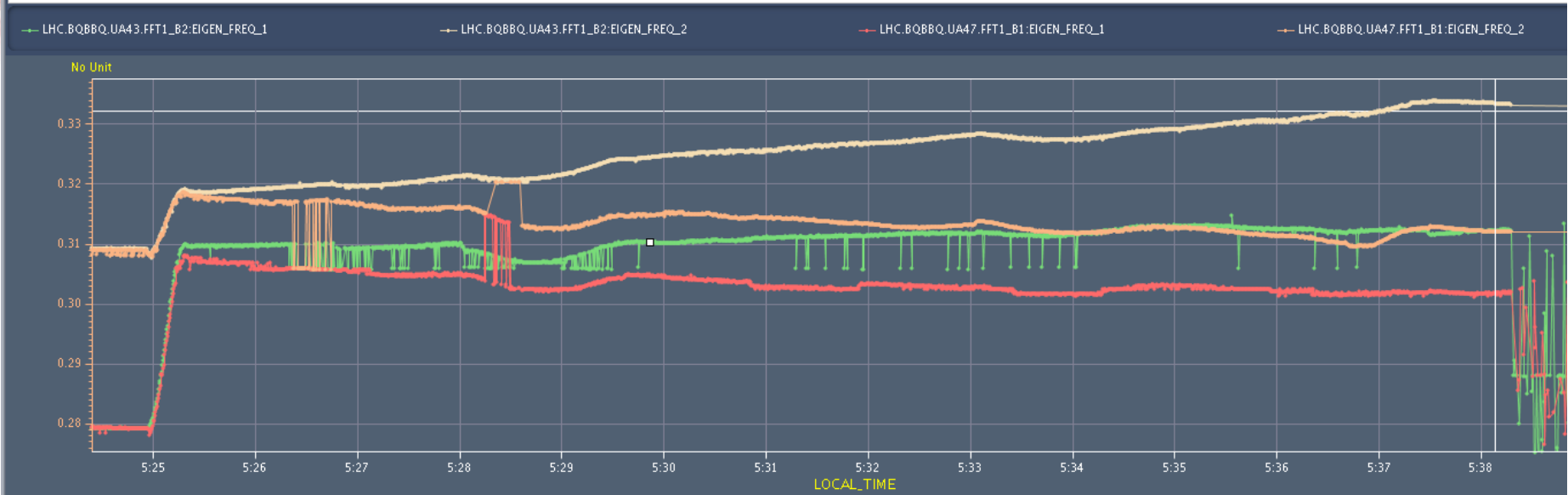


- 
- Temporary solution:
 - Block the real time input of the FGC and real time output of the tune and orbit feedback at the end of the ramp
 - Tested both
 - Reliable operation of orbit and tune feedback is mandatory for operation at higher intensity → need expert working on that.
-

Issues during the squeeze

- Tune drifts leading to the loss of one fill

Timeseries Chart between 2010-06-06 02:04:26 and 2010-06-06 20:04:26 (LOCAL_TIME)



- Re-commissioning of the squeeze with reduced intensity in steps (9,7,5,3.5 and 2 m) performed on Sunday to early Monday morning
- Tune/chromaticity/coupling orbit corrections incorporated



Major reasons of down-time

- Cryogenics (~30 hours)
 - Quench heater power supply MB.A24L5 (~5 hours)
 - UPS problem in UA83 (~3 hours)
 - Injectors (~5 hours)
 - Noisy quadrupole nQPS board A25L1 (2 trips of Sector 81)
→ threshold increased → board to be replaced
 - SW bugs introduced during the technical stop
-

Pending Issues

- Abort gap monitor (access required)
 - Noisy nQPS board on A25L1 (caused two trips of Sector 81)
 - Still problems with the sequencer not stopping after the execution of a task
-

- In progress: Physics fill with 13 bunches of 2×10^{10} per beam to gain operational experience
- Continue beam commissioning activities during the week:
 - Controlled longitudinal emittance blow-up
 - Injection studies - LDBS
 - BI studies for higher intensity operation
 - Transverse damper commissioning
 - Collimator setting-up
 - Nominal bunch intensity in the ramp with Transverse FB on
 - ...