Thursday 22/4/2010

Morning:

- Injecting again beam 1 and beam 2
- Lost B2 at injection: It looks like losses at the TCDI's seen at the Q7
- Switch to inject and dump for beam 2 for investigation

TI 8 Trajectory: seems that we may have accumulated some drift over the past weeks which could mean the beam axis is now closer to the TCDI jaws at the downstream end, so we are probably much more sensitive now to small changes in trajectory or beam size/tails.
To be done: revisit the TL trajectories and steering in the near future, to try to avoid these problems of losses on TCDIs.

Thursday 22/4/2010

Collimator checks: opened TCDIH.87904

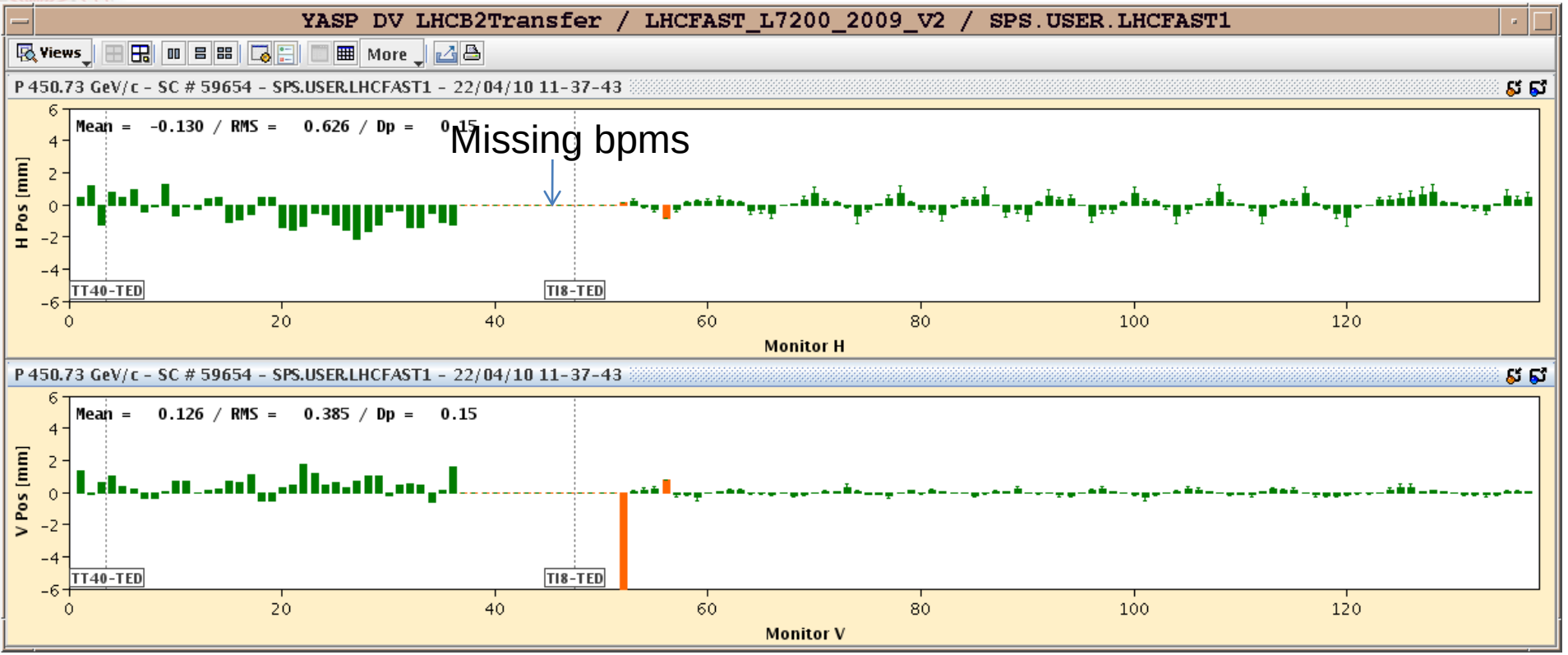
→Losses a factor 10 lower with TCDIH.87904 opened

TCDIH.87904 set now to +/- 5 mm around the beam-based centre: no more losses close to threshold now

Left TCDIH.87904 at new setting - still factor x10 lower. We can fill like this but this collimator and TL steering needs to be revisited for several hours before any higher intensity checks.

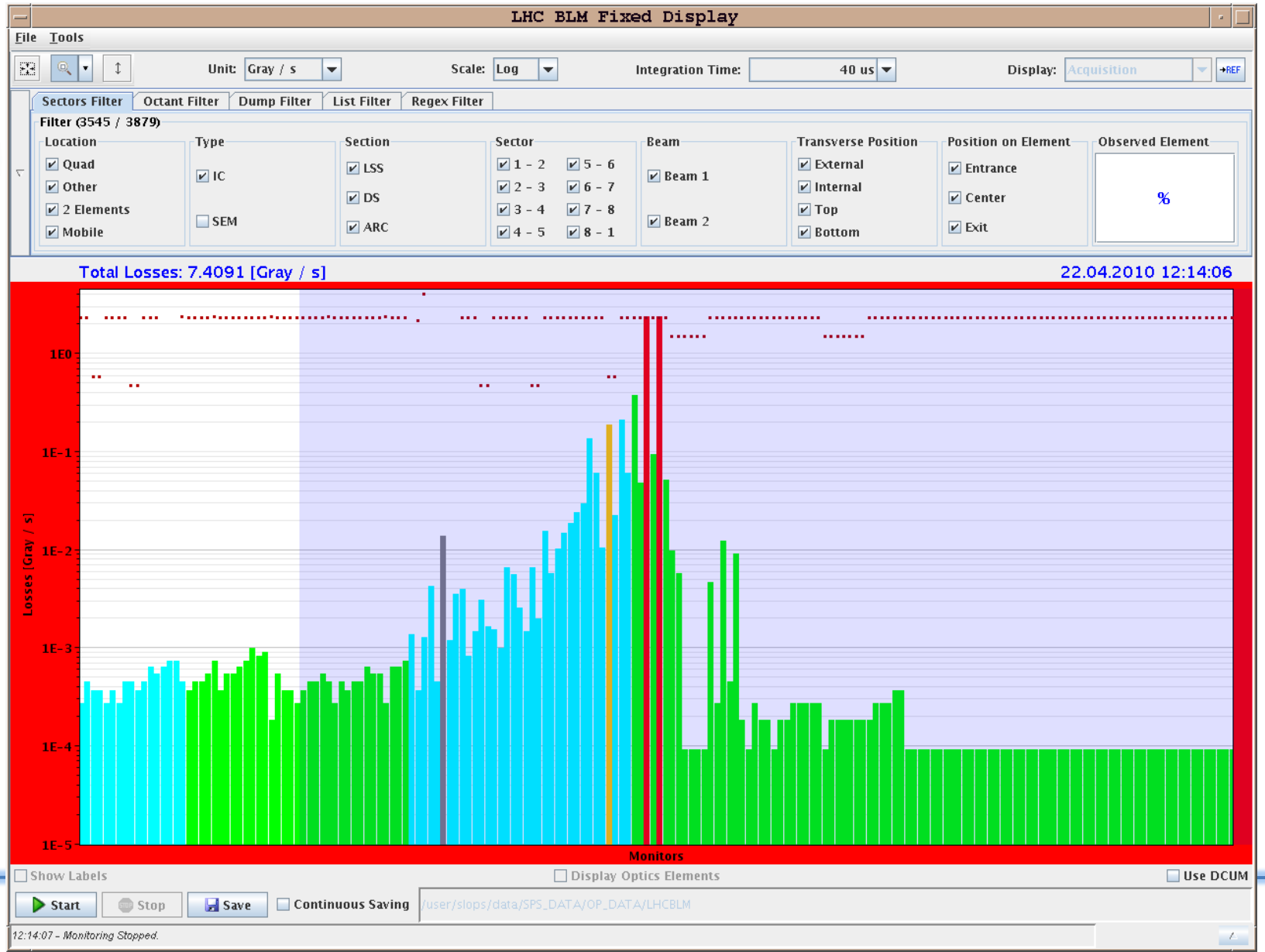
BLM : optimisation needed.

Thursday 22/4/2010

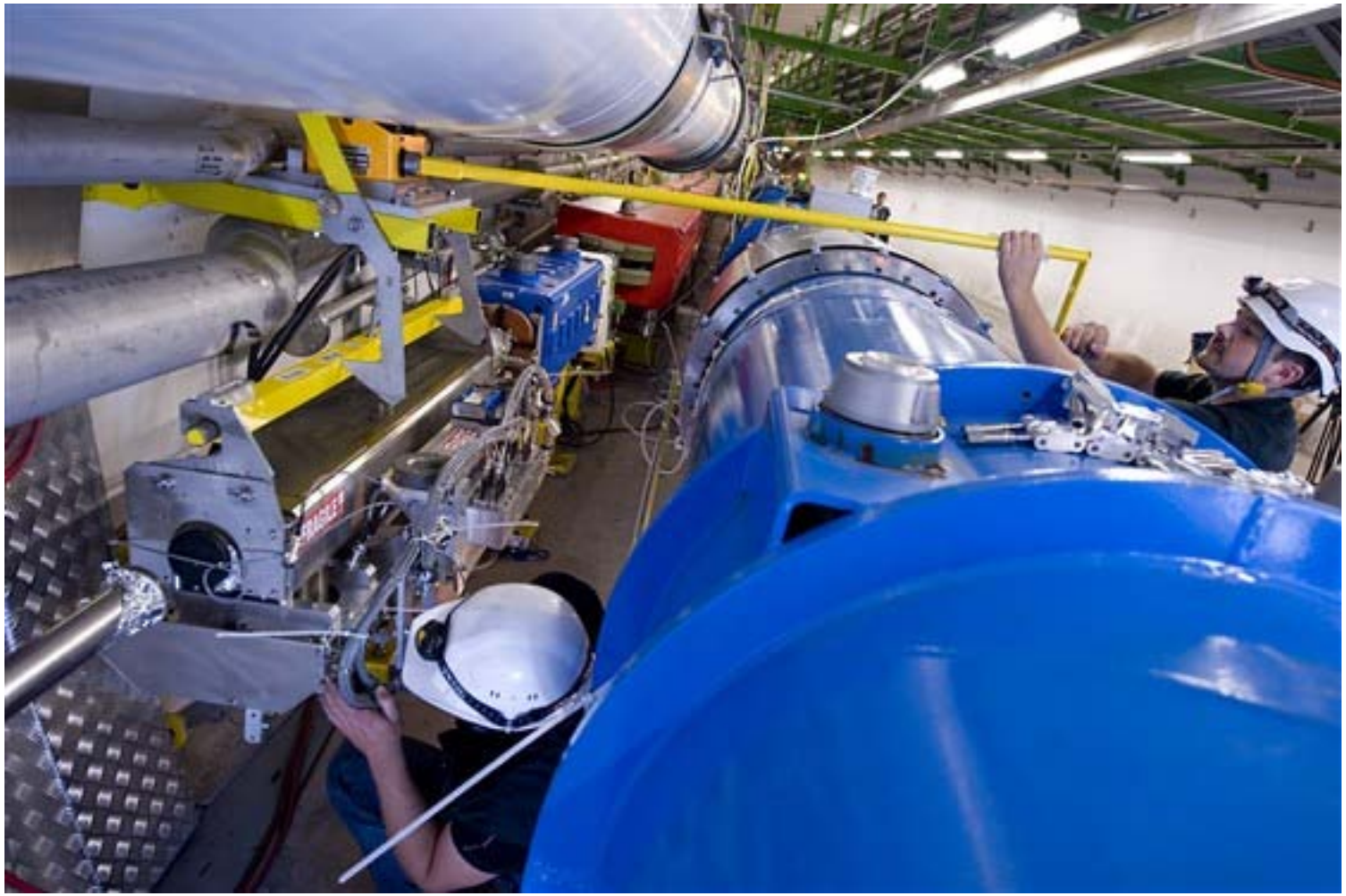


Subscription to FESA : will be fixed Friday am.

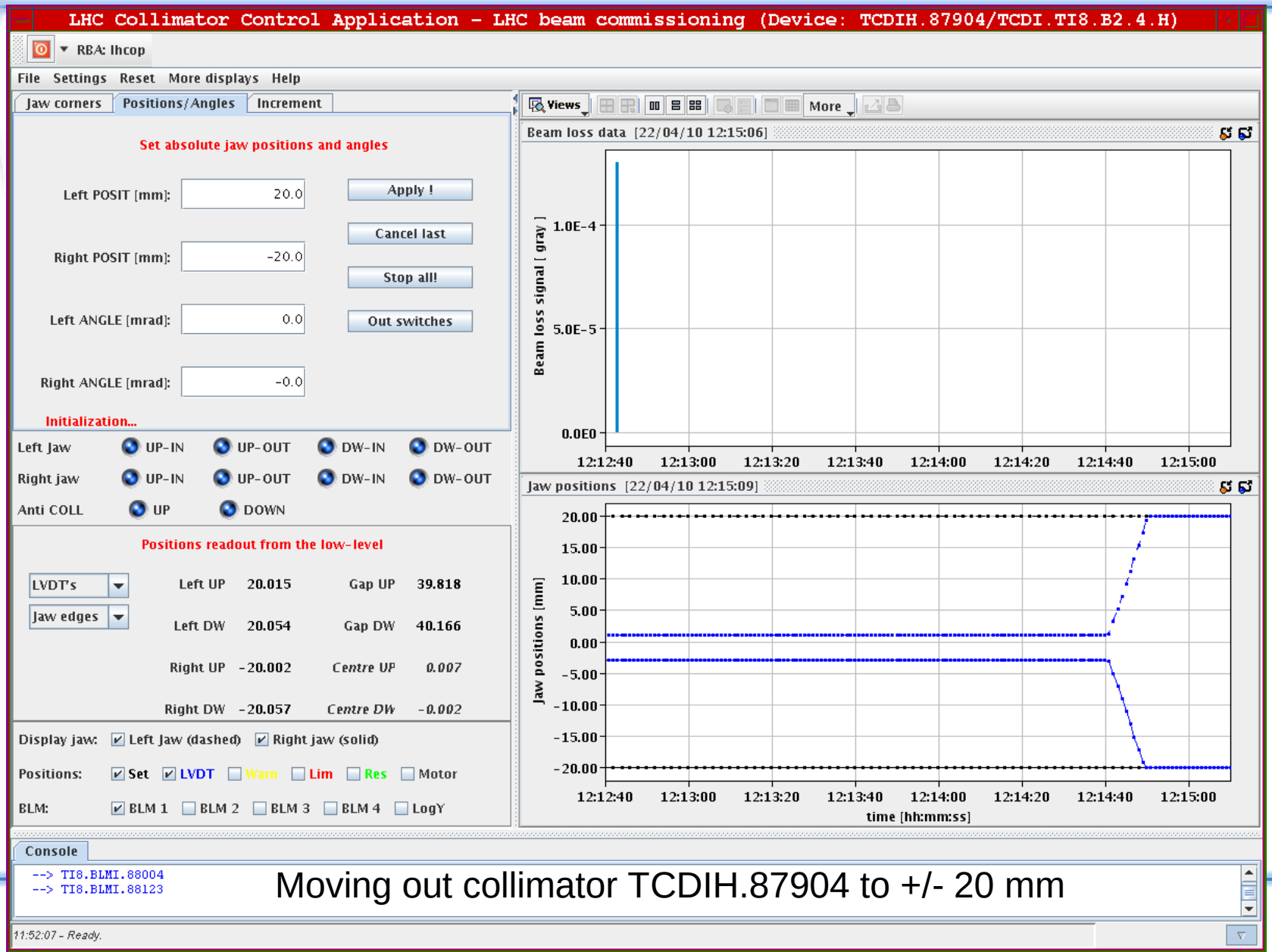
Thursday 22/4/2010



Tunnel View



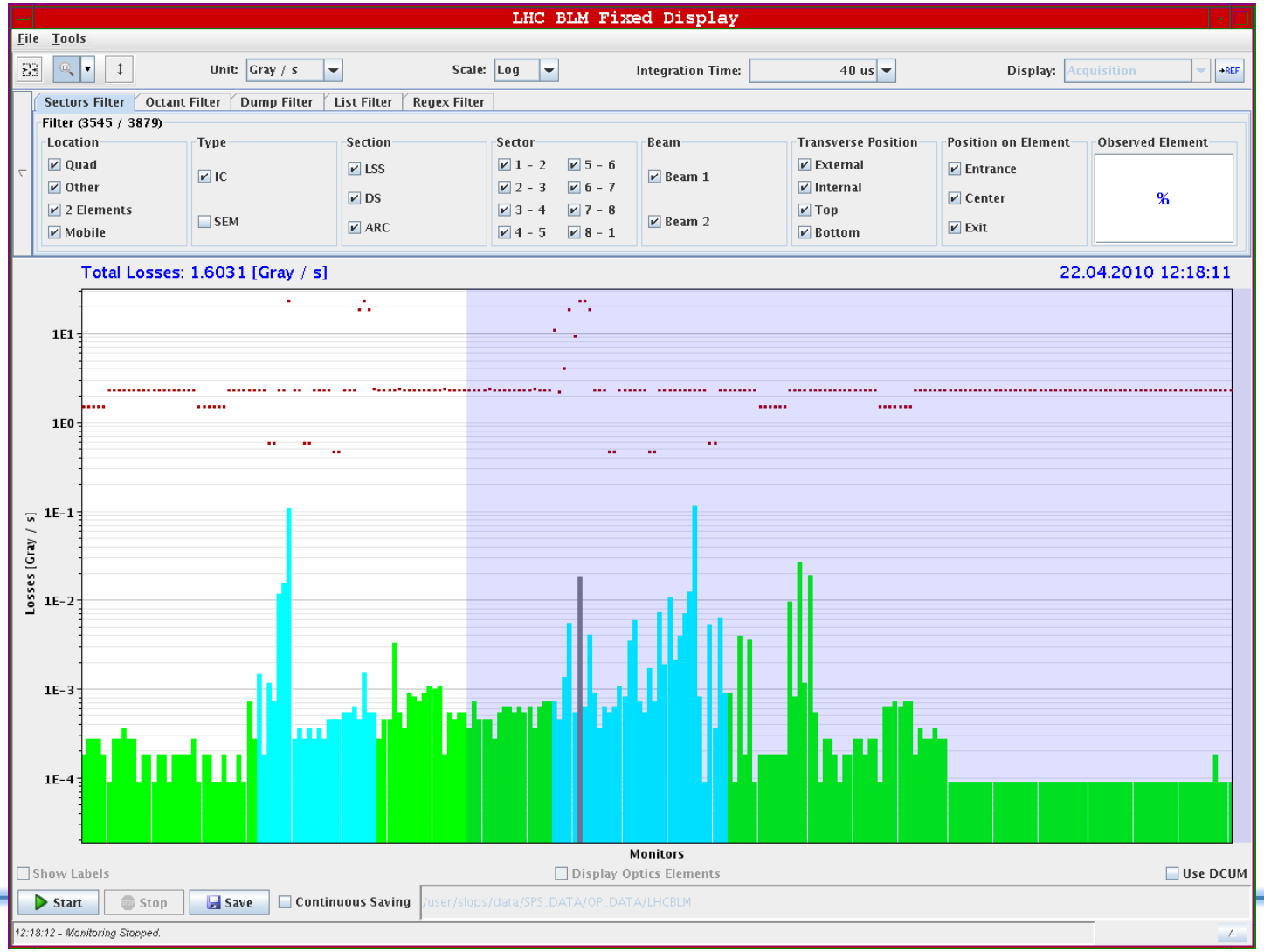
Thursday 22/4/2010



Moving out collimator TCDIH.87904 to +/- 20 mm

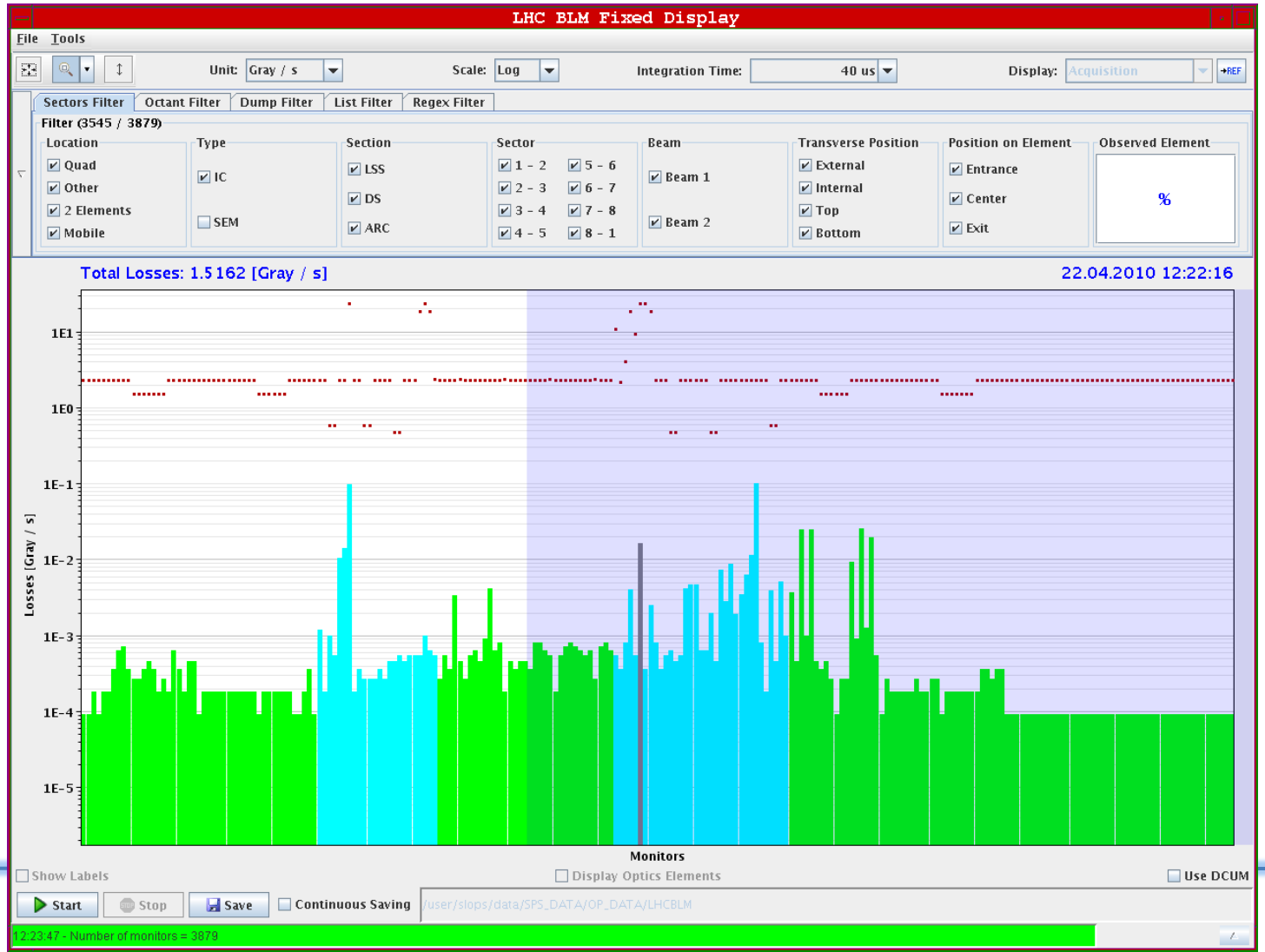
Thursday 22/4/2010

Losses a factor 10 lower with TCDIH.87904 opened



Thursday 22/4/2010

Losses with TCDIH.87904 at new settings (+/- 5 mm around the beam-based centre)



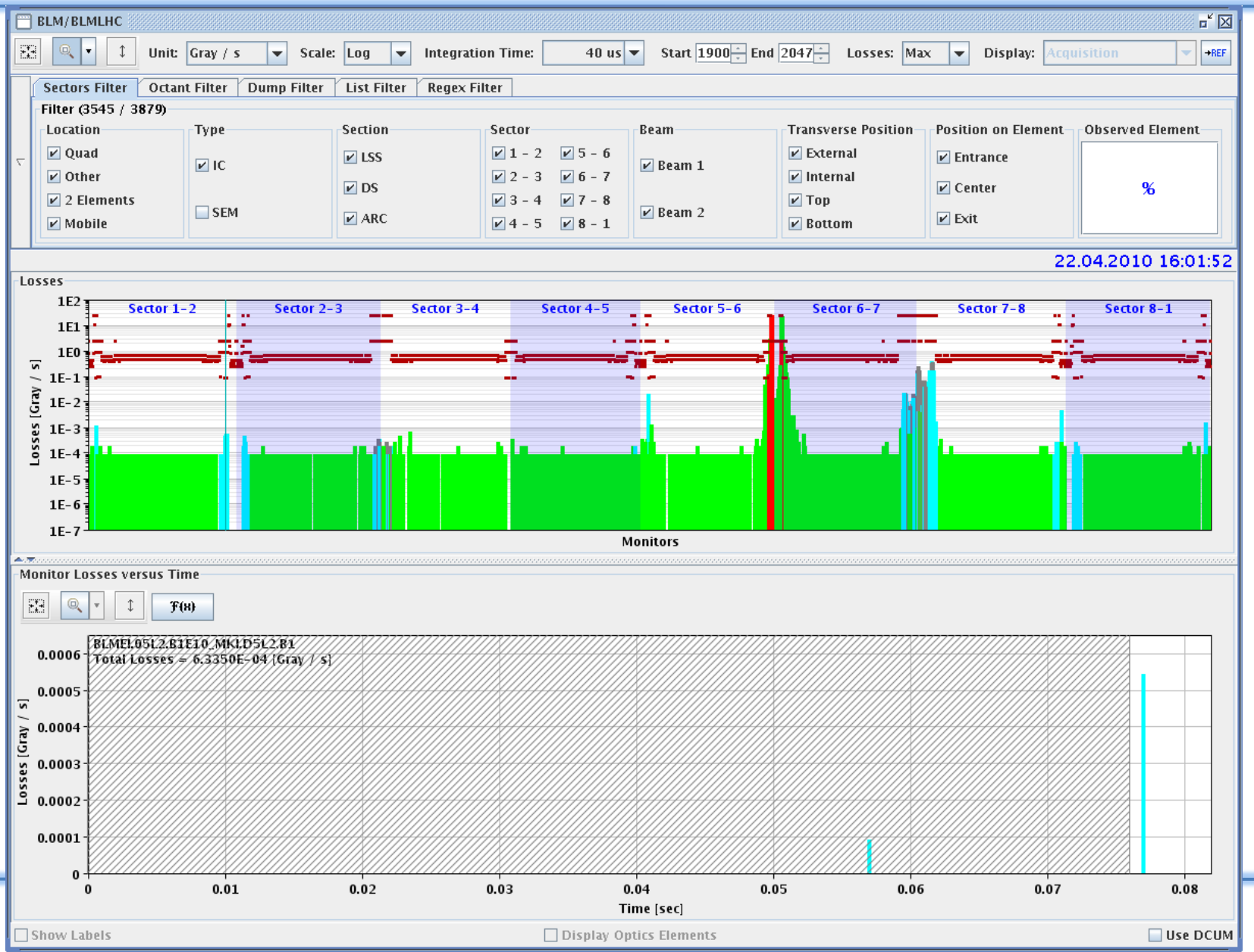
Thursday 22/4/2010

From noon – afternoon:

- Injecting – Ramping – All fine
- Squeezing : Beams almost completely lost: tunes crossed resonances at the end as a result of incorporation of the last tune trims of yesterday, which were done for loss maps and not rolled back – now removed !
  - Squeeze done without any prb: cut the squeeze stops by a factor 2
  - Got a loss maps
- With what was left in the machine: De-bunched – Dumped beam with operator switch –

Analysis of PM data: The timing of the TCT loss peaks in P5, P8, P1 is the same as the dump timing; P2 losses seem to be happened before.
Comparison to yesterdays asynch dump at 18:31:
Losses in P5 today are a factor 2 lower, P8 didn't change, P1 is a factor 4-10 lower

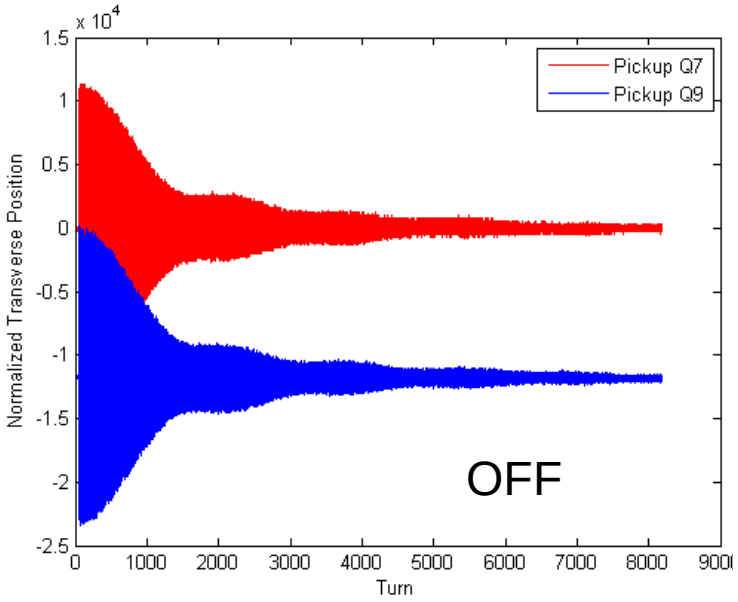
Thursday 22/4/2010



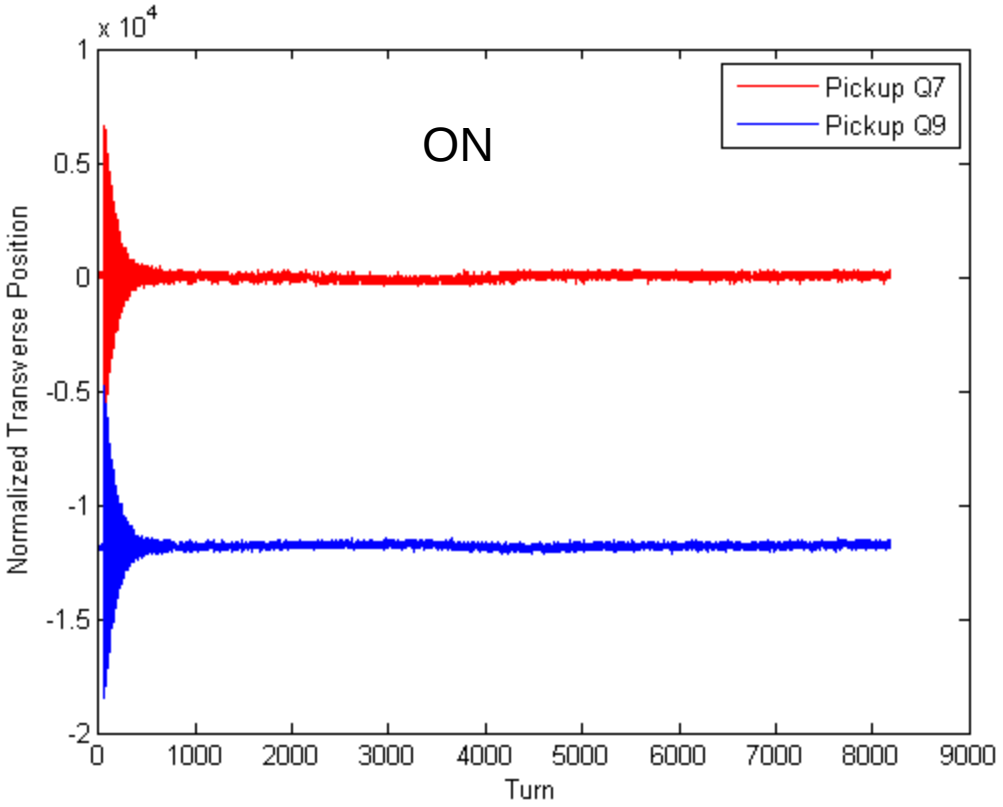
Transverse Damper

- One set of dampers (#13 and #14), vertical, beam2 successfully commissioned using a single pick-up and phase rotation by an FIR filter (Q9 pick-up used), pulse stretching for single bunch mode used.
- Damps well injection oscillations and kicks by Q kicker. Pictures of damping of Q-kicker kick (damper on/off - 100 % kick strength of Q-kicker used). W. Hofle for ADT team.

Damping of Beam Excitations

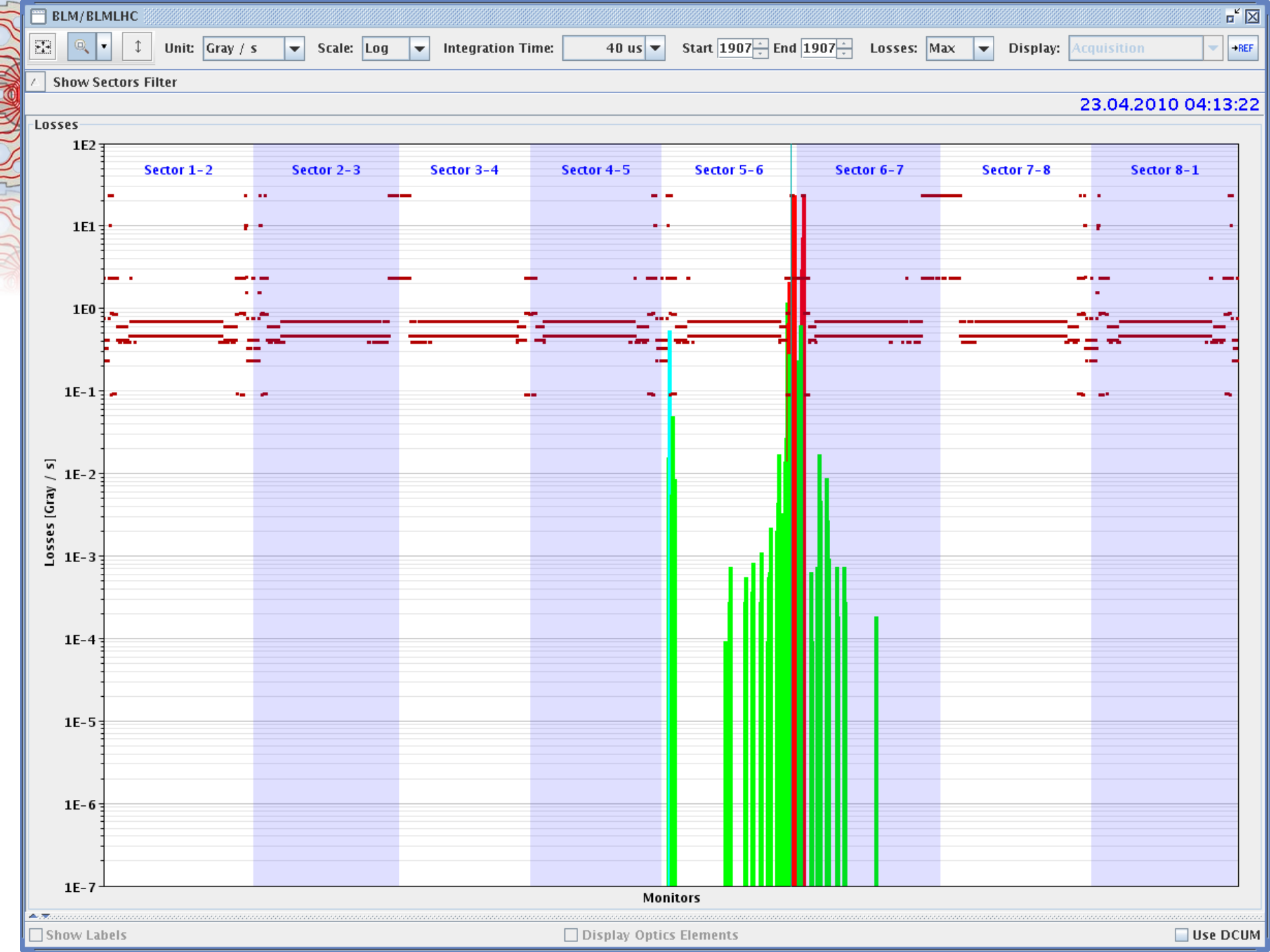


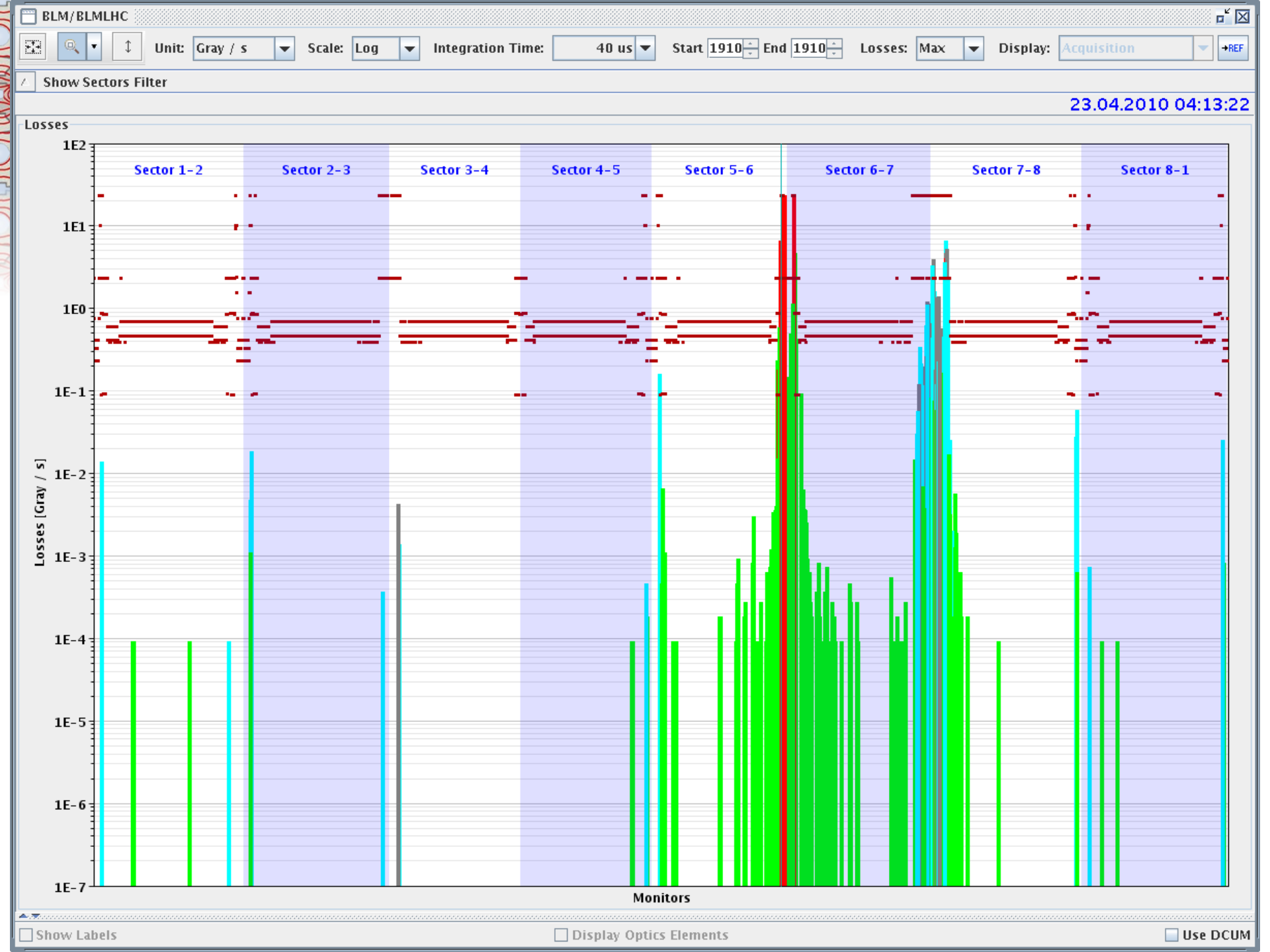
Will help to keep emittance growth under control!

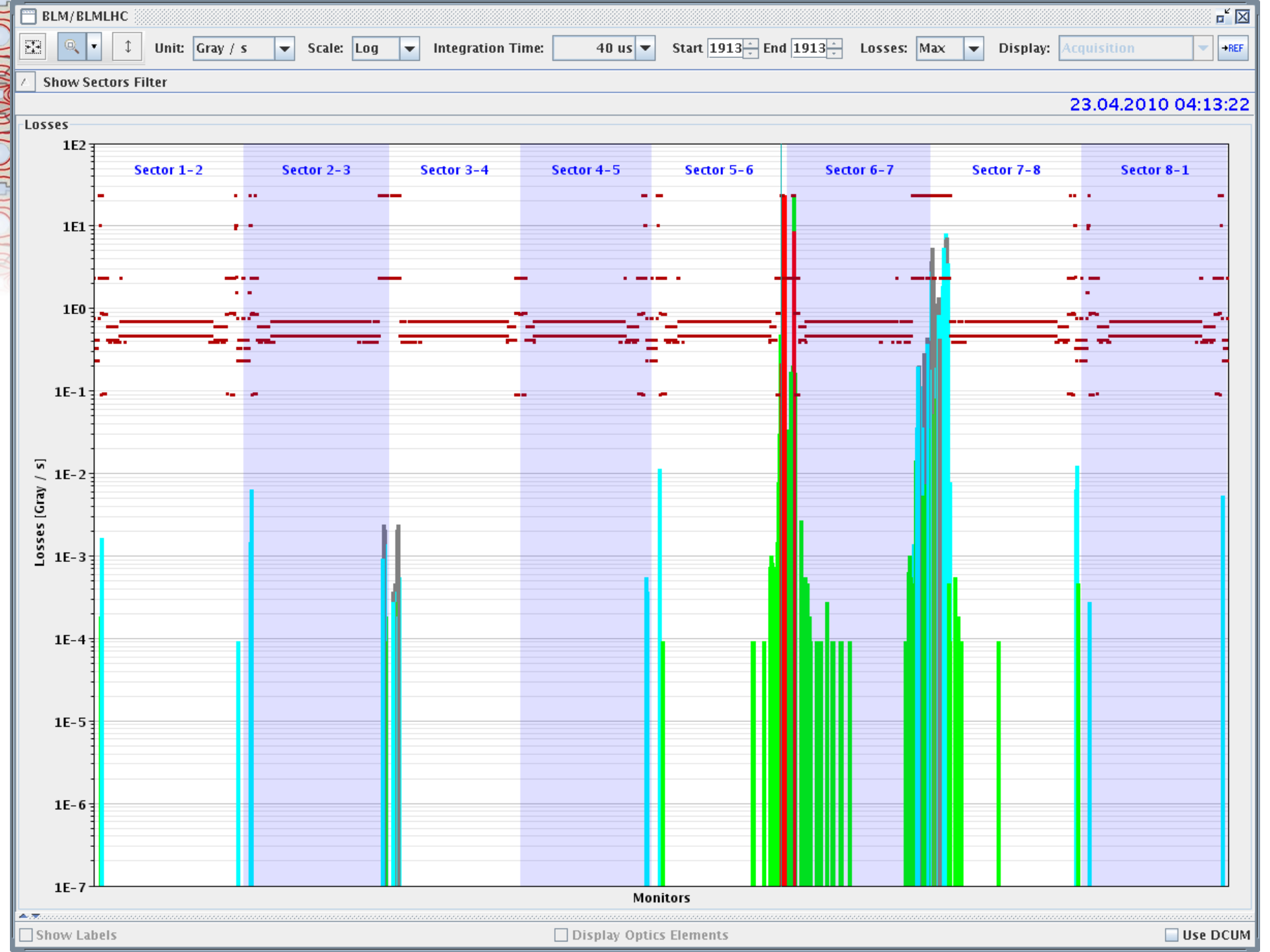


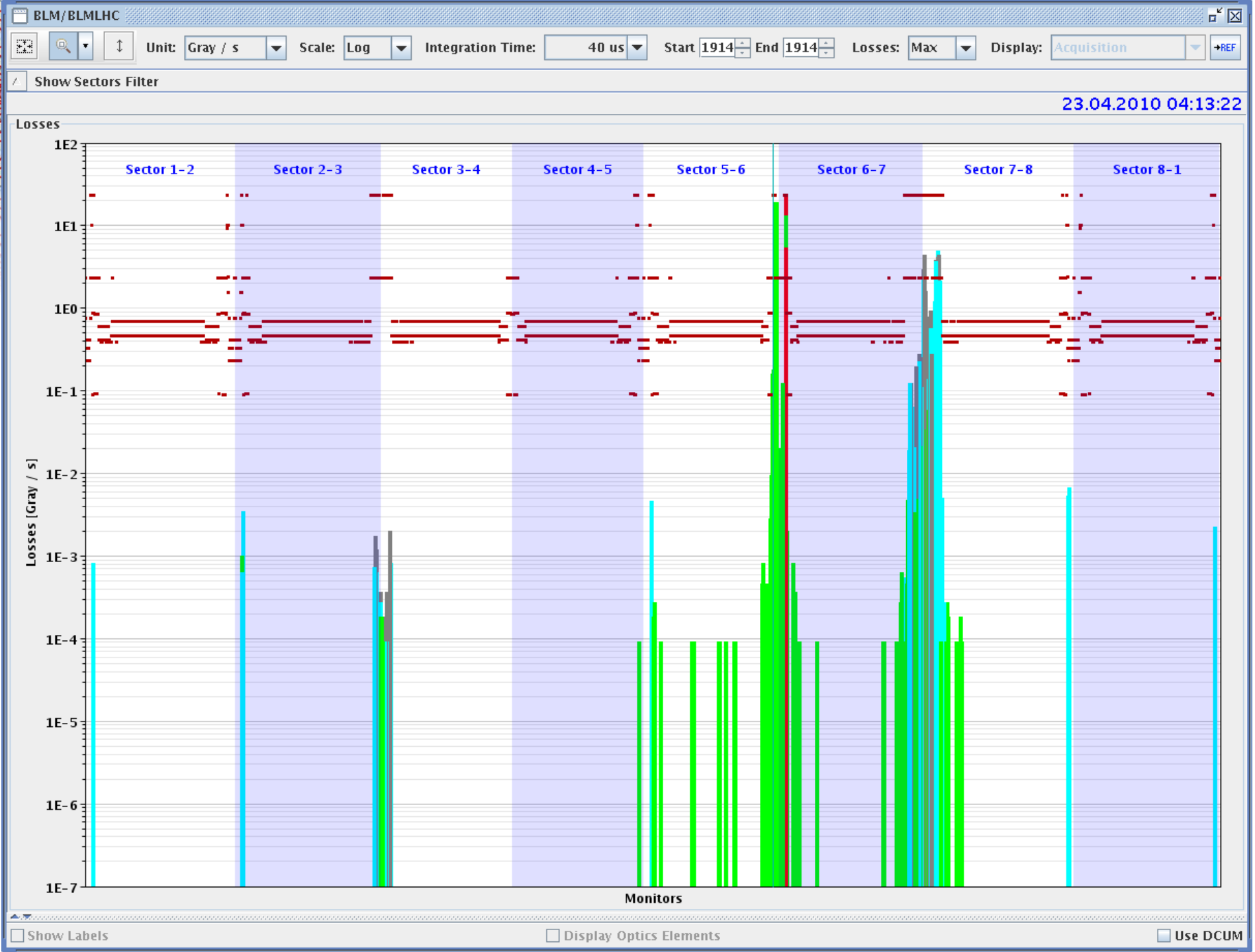
Asynchronous Beam Dump Test (1e10 p)

- About 50-70% of the bunch intensity was in the gap when we dumped
- Big losses in P6. BLM saturation and some missing signals make quantitative diagnostic difficult
- P6 Q4 and Q5 BLMs well above threshold but no quench- Losses around ring at TCTs below about 0.1 Gy/s level on 40 us, except TCTs for B2 R5, which are maybe a factor 5-10 higher.
- Losses on Q5.R5 at 0.05 Gy/s level on 40 us which would be good to understand better- Overall results look consistent with the very rough estimates that about 2e-4
- 1e-3 of the total abort gap population leaks around the ring - which would be about 0.02 - 0.1 of a full bunch.
- Full analysis required, but **from our side OK for stable beam at this bunch intensity.**
- For next fills need to make sure that the TCSG.P6 and TCDQ settings are correct in the beam process, and that they are driven correctly with the interlock thresholds.


BLM/BLMLHC
Unit: Gray / s
Scale: Log
Integration Time: 40 us
Start 1907
End 1907
Losses: Max
Display: Acquisition
REF
Show Sectors Filter
23.04.2010 04:13:22
Losses
Sector 1-2
Sector 2-3
Sector 3-4
Sector 4-5
Sector 5-6
Sector 6-7
Sector 7-8
Sector 8-1
1E2
1E1
1E0
1E-1
1E-2
1E-3
1E-4
1E-5
1E-6
1E-7
Losses [Gray / s]
Monitors
Show Labels
Display Optics Elements
Use DCUM


BLM/BLMLHC
Unit: Gray / s
Scale: Log
Integration Time: 40 us
Start 1910
End 1910
Losses: Max
Display: Acquisition
REF
Show Sectors Filter
23.04.2010 04:13:22
Losses
Sector 1-2
Sector 2-3
Sector 3-4
Sector 4-5
Sector 5-6
Sector 6-7
Sector 7-8
Sector 8-1
1E2
1E1
1E0
1E-1
1E-2
1E-3
1E-4
1E-5
1E-6
1E-7
Losses [Gray / s]
Monitors
Show Labels
Display Optics Elements
Use DCUM


BLM/BLMLHC
Unit: Gray / s
Scale: Log
Integration Time: 40 us
Start 1913
End 1913
Losses: Max
Display: Acquisition
REF
Show Sectors Filter
23.04.2010 04:13:22
Losses
Sector 1-2
Sector 2-3
Sector 3-4
Sector 4-5
Sector 5-6
Sector 6-7
Sector 7-8
Sector 8-1
1E2
1E1
1E0
1E-1
1E-2
1E-3
1E-4
1E-5
1E-6
1E-7
Losses [Gray / s]
Monitors
Show Labels
Display Optics Elements
Use DCUM


BLM/BLMLHC
Unit: Gray / s
Scale: Log
Integration Time: 40 us
Start 1914
End 1914
Losses: Max
Display: Acquisition
REF
Show Sectors Filter
23.04.2010 04:13:22
Losses
Sector 1-2
Sector 2-3
Sector 3-4
Sector 4-5
Sector 5-6
Sector 6-7
Sector 7-8
Sector 8-1
1E2
1E1
1E0
1E-1
1E-2
1E-3
1E-4
1E-5
1E-6
1E-7
Losses [Gray / s]
Monitors
Show Labels
Display Optics Elements
Use DCUM

Friday 23/4/2010

12:00: Abort Gap Cleaning

16:00: Setup Beam Flag. 3 bunches. Ramp and squeeze for stable beams.

This will carry on until 9:00 Saturday.

Weekend program to be reviewed with recent injection issues and delays in the program.

High risk that there will be no 450 GeV high intensity collisions on Saturday night.

Details discussed at 17:00