13 - 20 July
Weekly Report

Riccardo Longo
20/07/2018
Weekly Meeting
Beam: problem at each stage of the extraction in different times, luckily all can be solved relatively fast.

- ~4 h no beam in total;
- High intensity (~130 \(10^{11}\) on T6) starting from 9:30 PM;
- 1 access, profiting of no-beam;

Problems on:
- PA02V (patch panel connection, **fixed with access** after 2h)
- PA05U (Most probably due to the cable, to be replaced). Port excluded from DAQ.
- ECAL (SID 627, **fixed during access** power cycling the crate with corresponding ADC);
- Problem with CDR, most probably due to CASTOR, **fixed** restarting CDR;
Saturday 14

- No beam for 2 hours in the morning + 1 h of no beam in the afternoon + 1 h of low intensity beam (~ $55 \times 10^{11}$ on T6)

- Problems on:
  - RICH HV failure. ~ 20 spills affected.
  - Pccore12, not reachable. Vladimir went to reboot it manually in the DAQ barrack (fixed);
  - NMR probe of SM2 not working, but SM2 looks fine; The NMR teslameter lost the signal. Christophe locked it again (fixed);

- To reboot the crate with GEM HV - LV, RichWall HV, PS01 HV
- First attempt not successful, re-plugging 2 modules of GEM HV the problem was fixed

Access, 30’

- ECAL1 problem. Reload did not help. Quick access during bad beam condition to fix it.
Sunday 15

- Beam: ~4 h of no beam in total

Main Power Supply down

Power Glitch + Booster restarting problem

- Issue on GEM1-2 SID.
- 100% errors on MurphyTV Fixed with a power cycle of LV and APV;

Access ~1h

- To fix problems on DC05 and GEMs
  - DC05 fixed
  - GEM partially fixed, we lost GM04V

Access ~40 min

- To fix problems on ST03
  - Pccofe13 was stuck, no possibility to reload 323 and 324. Access to reboot it manually. Problem fixed
Monday 16

- Beam: ~ 1 h of no beam

- Timeout on MUX12;
- Vincent tried a reboot the hosting VXS but pccofe52 did not boot properly. System failure of the crate.
- Access needed to unplug and replug pccofe52. In this way, problem fixed;

Access, ~ 3h 45 min

- Short in the morning (around 9:00) on the entire DC01/MM rack (DC threshold, DC/MM HV and also DC LV;
- Problem identified on the CAEN Mainframe SY 2527 (owned by Marcin);
- Even removing the HV modules from the mainframe and the system was still in failure;
- Replacement found at the e-pool, but it was the last one and they requested from us to start a repair procedure to CAEN (asap);
- System put back in operation;

- NMR teslameter for SM2 broke up around 9:00. At the moment, no NMR reading.

- After resuming the data taking, problem on MP01Y1 (w/o MTV errors).
- HV issue at the level of the crate (a ring on one of the HV module unplugged during the change was not properly locked).
- MP01Y1 is practically not working starting from here (but it was already affected by issues related to the broken fuse).
Tuesday 17

- Rather stable beam, practically no interruption during the day.

- New Metrolab NMR Teslameter installed in 888. Monitoring back.

- Access to recover MP01Y1 and fix and issue on DC00.

- Around 5:30 PM Johannes loaded a new beam tuning and we collected ~ 250 spills to study the changes. See talk by Andrei Gridin in the following.

- After it, we flipped the polarization and we started polarizing in //, alignment runs.

- Target polarization measured before the flip:
  - **Upstream:** 68.23%
  - **Downstream:** -62.81%

- Relaxation time studies by Alain Magnon.
**Wednesday 18**

- Rather stable beam until the beginning of the MD and after 10 PM (as expected).

  ![Beam Stability Diagram]

- CEDARs-related activities by Vincent: HV tuning, alignment, pressure scan.

- In the morning we went to free access w/o any communication.

- GM04V intervention by Matthias. ADC exchanged. Plane back in operation.

- In the morning we went to free access w/o any communication. After, Annika found that the main door of the zone 221 was forced.

- Moritz, Vincent, Christophe, Marco: Installation of ePowerSwitch for Inxpool25 (DC00-01 thresholds).

- Now can be restarted remotely:
  - **Upstream:** -70%
  - **Downstream:** 75.4%
Knowing that there will be an intervention of RF cavity and then we would get a bad supercycle until 6 PM, we decided to restart polarizing from 9 AM to 6 PM;

When we switched to dipole:
- **Upstream**: -72.3%
- **Downstream**: 77.1%

Noise on DC04V2 disappeared after power cycling pccofe20

New noise on MP03U1
In the sub-period 1 (05/07/2018 - 18/07/2018) we collected ~29600 good DY spills.

### Spills counter

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<thead>
<tr>
<th></th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
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</thead>
<tbody>
<tr>
<td>Good DY spills</td>
<td>3218</td>
<td>3062</td>
<td>2900</td>
<td>2713</td>
<td>2562</td>
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<tr>
<td>Recorded (SP1)</td>
<td></td>
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250 spills for beam test + 150 spills for alignment + 250 spills for alignment +

<table>
<thead>
<tr>
<th></th>
<th>Wednesday</th>
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<th>Friday</th>
<th>Tot.</th>
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<tbody>
<tr>
<td>Good DY spills</td>
<td>37</td>
<td>2177</td>
<td>~1850</td>
<td>~4050</td>
</tr>
<tr>
<td>Recorded (SP2)</td>
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~1700 spills for trigger test
Summary

• Rather stable week of data taking;
• At the moment, we are operating w/o one port on PA05U (bad cable) and some sectors on MP01X1 and MP01Y1 (broken fuse).
• From COMPASS side, few hours (~6-7h) of no-DY data taking when beam was available because of major issues that required access/interventions. We collected ~90% of the spills that have been delivered to us in the last week!
• Since Monday, rather stable beam conditions. Practically no unexpected beam interruption.
• We are on good track, let’s hope the run will continue in these conditions!

Thanks to all the shifters and the detector experts for their commitment!

Good luck to Marketa!
Spills delivered to COMPASS used for:

- DY-data taking: 80%
- Other types of data taking: 9.5%

SPS efficiency (T6 > 110): 82.5%