Week Summary Report

Supervisor: Luke Dyks

Overall Summary

- Week type: User Experiments
- Date/WeekNumber: 21/06/2021 to 25/06/2021 (Week 13)
- EDMS number: Not yet assigned
- Beam time: 25.5 hours
- Fatal Failure time: 3 hours
- Installation time: 26.5 hours
- Number access: 11

<table>
<thead>
<tr>
<th>#</th>
<th>Experiment Name</th>
<th>Responsible</th>
<th>Institute</th>
<th>Installation time</th>
<th>Beam time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2565908</td>
<td>LHCb Photonic Crystal</td>
<td>Michele Blago</td>
<td>CERN</td>
<td>14.5 hours</td>
<td>16.5 hours</td>
</tr>
<tr>
<td>N/A</td>
<td>Diamond BLM</td>
<td>Belén M. Salvachúa Ferrando</td>
<td>CERN</td>
<td>3 hours</td>
<td>2 hours</td>
</tr>
<tr>
<td>2509118</td>
<td>LHC Cherenkov BPM</td>
<td>Andreas Schloegelhoefer</td>
<td>CERN</td>
<td>6.5 hours</td>
<td>4.5 hours</td>
</tr>
<tr>
<td>2523456</td>
<td>Micro BPMs</td>
<td>Guiseppe Pezzulo</td>
<td>CERN</td>
<td>2.5 hours</td>
<td>2.5 hours</td>
</tr>
</tbody>
</table>

Weekly activity

The week was split between the four different experiments. Most time was spent on the photonic crystal and the other experiments were fit around the necessary accesses. The photonic crystal team were able to complete scans with every different filter reducing the background radiation significantly. The diamond BLM team saw very strong signals on their scope. The LHC buttons team were able to complete several scans with several different configurations and both single bunch and a 30 bunch train. Finally the micro BPM team were able to see initial signals on their setup which will be improved further. There were a few failures, mostly in the klystrons and especially staffing.

Day by day report

Monday

- Access for most of the day to install
  - Photonic crystal (with adjustments to reduce background)
Diamond BLMs
- Copper targets for the BLMs
- LHC buttons
- Beam was set up after 16:00
  - 200-500 pC bunch charge
  - 80-90% transport easily
- **Issue with SF6 pressure in klystron MKS15**
- Initial scans of BLMs taken
  - The signal appeared to be too strong for their detector.

**Tuesday**
- Quick access in the morning
- Beam set up took approx 1 hour due to issues with control systems
- Photonic crystal scans undertaken
- BLM scans before lunch
- LHC Buttons scan before lunch
- Access after lunch
  - Tube fitted to the photonic crystal experiment to reduce background
- More photonic crystal scans after the access
- Day ended with LHC buttons scans

**Wednesday**
- Long access in the morning (2.5 hours)
- Beam back for photonic crystal scans
- LHC buttons scans
- Access after lunch
- **Issue with klystron MKS11**
  - New power converter had to be installed.
- LHC buttons experiment
- Photonic crystal scans

**Thursday**
- Access in the morning
  - Photonic crystal
  - Micro BPMs fully installed and aligned with old setup added for comparison.
- Photonic and LHC buttons scans
- Access after lunch
- Further Photonic and LHC buttons scans
- **Issue with the Matlab program**
  - The control gui became completely impossible to use

**Friday**
- Access in the morning
- Micro BPM measurements taken
- Issue after lunch with laser synchronisation, easily fixed by Edu
- Final photonic crystal scans
- Final LHC buttons scans
- Additional micro BPM measurements taken

**Other business**
Wilfrid finished the preparation for the following week’s operation with the R2E experiment.

Additional resources

Main issues

- Staffing restrictions
- Klystron failures
- Number of accesses

Actions needed to be followed up