

MPP meeting 17 September 2010

Original agenda:

- Review recommendations, conclusions and follow up (J. Wenninger/R. Schmidt)
- Update on search for fast losses below threshold (E. Nebot Del Busto)
- Follow up on fast events and collimator scraping at end of fill (A. Nordt)
[postponed for next time]
- AOB

Present:

Stefano Redaelli, Ruediger Schmidt, Richard Jacobsson (LHCb), Nicola Bacchetta (CMS), Bernd Dehning, Siegfried Wenig (Atlas), Antonio Di Mauro (Alice), Walter Venturini, Matteo Solfaroli, Mariusz Sapinski, Bruno Puccio, Barbara Holzer, Eduardo Nebot, Brennan Goddard, Laurette Ponce, Sigrid Wagner, Verena Kain, Annika Nordt, Agnieszka Priebe, Mateusz Dabrowski, Jorg Wenninger, Mike Koratzinos.

Minutes:

Report on the external MPP review (Jorg)

Jorg reviewed the recommendations, conclusions and follow up of the external review of the LHC machine protection. Overall the committee was impressed with the status reported. The complete list of closing remarks can be seen in the transparencies of Jorg. We here mention a selected sub-list of topics: Sequencer: it was felt it can be a risk factor. Alarms application: too many alarms for the operator to pick up the important ones amongst them. STABLE_BEAMS flag: currently it does not check the correct β^* . This might be a problem is experiments ramp up automatically (Richard: they do). Abort gap: at higher intensities we would need to have the abort gap cleaner. BPMs: the issue of temperature stability must receive higher priority. This is a complex problem. TOTEM and VELO position: currently we rely on the positions given by the experiments. Richard: there will be a review of the VELO positioning early next year. BLMs: the thresholds are rather conservative, but this is not an issue as there is no impact on availability (at least up to now). Quench tests will be performed during the next days. Fast loss monitoring: strong recommendation for 25ns loss recording (based on diamond detectors). Fast BCT: problems with the 'beam presence' flag. The replacement by an independent failsafe system is strongly supported. Brennan: has an analysis of the proposed system been done? Injection protection: currently there is a software interlock. Movable devices: protection of wire scanner is currently in place. Leakage due to injection: should be revisited.

In conclusion: the LHC is ready to go beyond 3MJ. Richard (who was also a member of the committee): there is no argument against a fast rise in intensity as long as understanding is complete. Ruediger however argued against large steps since there might be threshold effects.

Plans for intensity increase (Jorg)

Jorg gave us the plan for going up in beam intensity: 3 fills (20h of physics) at a given intensity. Intensity step 48 bunches. One loss map per week. Collimator hierarchy: the question was raised if an automatic check can be implemented. This needs to be discussed with the collimation team. After increasing intensity, work on β^* .

Search for below threshold events (Eduardo)

Eduardo gave an update on the status of fast loss dumps. There have been 7 dumps so far. In addition to the 83h of stable beams analyzed so far, another 140h of fills have been analysed for similar events below the dump threshold. For this analysis a threshold 3 times higher than the 'record on change' threshold was used. The results were 0.057 events/hour in 24 bunch fills and 0.126 events/h in 48 bunch fills. The distribution of loss signal looks poissonian and the distribution around the ring uniform (there are gaps – currently not very significant – around Atlas and CMS).

We need to keep an eye on these fast loss dumps as they might potentially be a problem.

AOB

Annika's talk is postponed for the next meeting