

17th Meeting of the LHC Beam Cleaning Study Group 23.10.2002

Present: *R. Assmann (chairman), H. Burkhardt, J.B. Jeanneret, D. Kaltchev, R. Schmidt*

1) Update on Collimation Project

RA reported on collimation activities. The LHC collimation project is now being set up and the most important manpower will soon be in place.

2) Maximum Orbit at Dump Extraction (Q4) from Collimator Settings

RA showed (see slides on web) that the collimation system together with BLM-triggered interlocks will roughly constrain the orbit in the LHC to less than 9 mm at injection, less than 11 mm at 7 TeV before squeeze and closing of collimators, and less than 4 mm in physics. These orbit offsets pose problems for the beam extraction. Additional measures (beam dumps based on fast BPM's) are being looked at to constrain orbit changes before dump to about ± 2 mm or so. This will be discussed in the Machine Protection WG, which already started addressing this issue.

3) Input to INB Radiation Studies

JB showed the set-up used for INB required radiation studies for the collimation system. It was agreed with S. Roesler and A. Faugier to use the present system with artificial double-density graphite for the studies. The likely changes in the collimation system (low Z material, coating, longer jaws, a few additional collimators for machine protection, ...) are judged acceptable for INB purposes.

4) Idea of a "Step" Collimator

RS presented the idea of a "step" collimator. There was some discussion on advantages (no motor in vacuum, gap is always known, spare gaps exist) and disadvantages (one jaw scans are impossible, damage of an intermediate gap might ruin the whole device, more material). RA presented his concept of tank that has several jaws installed which can be interchanged remotely. Further discussions should follow, once we address the mechanical design.