

## 0.1 Beam Checkout with Superharps and Beam Position Monitors

- Experts: Mark Jones
- Expected time: 3 hours
- Initial measurement of beam spot size. Followed by calibration of girder BPMs
- Conditions:

beam current:	5 A
fast raster:	off
target:	none

- Ask MCC to do superharp scan with superharps IHA3H07A and IHA3H07B and put entry in ELOG. Record the 3 BPMs positions (3H07A,3H07B,3H07C) during scan.
  - Want beam spot with sigma\_x and sigma\_y below 200 um ( beam pass 1-4) and below 300 um for beam pass 5.
    - \* If beam spot size is too large contact Run Coordinator to decide how to proceed.
    - \* If good beam spot size, then this will be first point in beam alignment
  - Determine the BPM offset from measure harp position
  - Are X (Y) from IHA3H07A and IHA3H07B at zero within 300 um?
    - \* If not ask MCC to center using the BPMs as relative guide.
- Calibrate Girder BPMs to the girder harps at 5uA
  - Ask MCC to move the beam horizontally by 2 mm, and record at each setting both superharps and the three BPM's, both from MEDM/TCL and from the data stream after short runs.
  - Ask MCC to move the beam vertically by 2 mm, and record at each setting both superharps and the three BPM's, both from MEDM/TCL and from the data stream after short runs.
- Calibrate Girder BPMs to the girder harps at 30uA
  - Ask MCC to move the beam horizontally by 2 mm, and record at each setting both superharps and the three BPM's, both from MEDM/TCL and from the data stream after short runs.
  - Ask MCC to move the beam vertically by 2 mm, and record at each setting both superharps and the three BPM's, both from MEDM/TCL and from the data stream after short runs.

- Calibrate Girder BPMs to the girder harps at 60uA
  - Ask MCC to move the beam horizontally by 2 mm, and record at each setting both superharps and the three BPM's, both from MEDM/TCL and from the data stream after short runs.
  - Ask MCC to move the beam vertically by 2 mm, and record at each setting both superharps and the three BPM's, both from MEDM/TCL and from the data stream after short runs.
- Check raster size use harp at 10uA
  - Take harp scans with a fast raster with varying size, say 2 by 2, 3 by 3, and 4 by 4 mm<sup>2</sup>.