

InterCAT Technical Working Group Meeting

December 16, 1999

Agenda Review and TWG Activity Summary: (Steve Heald)

Steve opened the meeting and reviewed the meeting agenda.

Facility Reports

Facility Update/News: (Steve Davey)

Steve gave a brief review, noting that beam stability measurements are now available on the Web. He then introduced Mike Borland of the Operations Analysis Group, who walked the group through the APS rms beam motion computation. The raw data used to analyze beam motion is collected from 17 different BPMs around the ring (near the IDs). Mike told the group that the current system will be revamped based on the performance of the real-time feedback system.

Recent top-off results: (Dean Haeffner)

Dean presented the group with some basic results from simple experiments conducted at 1-ID to study the effect of top-off operation on the x-ray beam. Dean identified the personnel involved in the project and described the experimental setup. No actual injections were done; only the kicker magnets were operated. An 11.83 keV monochromator was used and current was at approximately 100 mA. The premonochromator slits were set fully open to catch all motion. Dean explained that the data was collected under three different sets of conditions, one original and two optimized. The original conditions comprised the storage ring operating parameters that have been in place since commissioning. Two different sets optimized conditions were generated based on modifications such as bump matching and feed forward (determined by the accelerator staff). Both horizontal and vertical motion data were studied. A 500 mHz oscilloscope was used and curves generated based on 50 shot averages. Dean presented and discussed the horizontal motion data, highlighting data points at the inboard wing, inboard half point, peak, outboard half point, and outboard wing on the curve. He also reviewed the vertical data curve, emphasizing points below the wing, below the half point, at the peak, upper half, and upper wing.

In evaluating the results, Dean noted that the horizontal data showed good shot-to-shot reproducibility at the peak point on the curve. The vertical data showed more noise and the shot-to-shot comparison was not as reproducible. He especially noted a prefeature in the horizontal data, an unusual blip at approximately minus 10 seconds to injection (when no magnet pulsing should have been taking place), that was not seen in the vertical data. He noted that future experiments will involve focused experiments.

CAT Reports

HP-CAT technical update: (Daniel Häusermann)

Daniel presented a brief overview of the current status of the APS's newest CAT, HP-CAT. HP-CAT is currently preparing a bid package to complete sector 16 (a total of nine hutches). Instrumentation details are being worked out and a variety of CAT staff are being recruited. The design for the LOM is being also drawn up.

He showed the beamline layout (five hutches on the ID line, four hutches on the BM line) and described the experimental focus of each hutch. Daniel gave detailed overviews of the FOE instrumentation for ID-A and of the SOE instrumentation on ID-C. Instrument design is ongoing for the bending-magnet beamline. He noted that over 50% of the experiments conducted at HP-CAT will require very small beams (3 to 5 μm size). Another innovation noted is the development of K-B mirror system kits for use on the beamlines.

Next Meeting

The meeting will be held Thursday, January 20, 2000, in conference room A1100.