

Minutes, 1/31/05 Tevatron BPM Upgrade Meeting  
Stephen Wolbers

This set of minutes, and all future minutes, are or will be deposited in the Beams Document Database as document number 792.

The agenda as announced consisted of:

1. TBT results on test stand - Jim Steimel
2. First turn results from last week's store - Rob Kutschke
3. Commissioning A3 - Mike Martens
4. AOB

1. TBT results on test stand - Jim Steimel

- Jim's slides can be found as Beams docDB #1551.

- Jim showed a comparison of real beam signals and the simulated beam signals on the test stand. The simulated signal has a "bounce" that gives a signal that is much longer (in time) than the real beam. Jim adjusted the Graychip decimation and the timing delay to take this into account. The change in the timing delay is not completely understood but is necessary (from 127 to 75 counts).

- To get the gain right Jim had to adjust the "shift" (pre-CIC filter gain) and the Coarse gain (pre-CFIR and PFIR gain). Using these values (shift 6, coarse gain  $2^1$ ) gives sigma of the position measurement of about 18 microns and a sum signal of ~4500.

- Jim looked at various beam conditions on the test stand (1st bunch and 12th bunch only), 36 bunches in the accelerator. These values have been loaded into the A3 setup as of Friday.

- Jim will next look at Uncoalesced beam on the test stand and then at first turn on the test stand. This should help debug any problems or issues that we see in the data and give some confidence that the setup is working properly under well controlled conditions.

- There was a short discussion of the tools needed to look at the data including W68 and Roger's application (W125?).

- The BPM logbook is updated with these results and settings.

- We had a discussion of the problems encountered over the weekend with the A3 setup and how to prevent it in the future.

## 2. First turn results from last week's store - Rob Kutschke

- Rob's study of the TBT data from the accelerator can be found in the writeup Beams docDB #1546. Rob looked at the sum and position signals and saw some strange behavior (see Fig 1 in the note).

- Once he corrects the "bad" position measurements Rob does a fourier transformation on the data to look for structures expected (or not) in the data. He sees the synchrotron frequency (80 Hz) in the horizontal data and the tune (more or less) in both vertical and horizontal.

## 3. Commissioning A3 - Mike Martens

- We did not go through Mike's list in detail (everyone has a copy and can refer to it or go to the listserv archive :

<http://listserv.fnal.gov/archives/tev-bpm-project.html>

to find it.

- Mike reiterated that he would like to see first turn flash and injection closed orbit (available through T39) as well as SDA values (these should be ready soon).

- We will decide based on all of the information and tests that we have made when to move on to B3 installation and commissioning.