

Minutes, 1/29/04 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. Final? buffer diagram and discussion
2. Overall plan for p-pbar cancellation
3. Calibration (we did not discuss this today)
4. AOB

0. Short items

- Bob is close to making turn-by-turn measurements with the prototype system in A1.
- The PMC UCD cards will be ordered by Craig McClure.

1. Final? buffer diagram.

- Jim showed the latest version of the buffer diagram and there was a discussion about the system design, how it compares to the current Recycler Echotek system (FIFO vs memory, for example) and how the Tevatron operations affects the buffer design and implementation. A desire to have I and Q as output (not just position and intensity) was expressed (also in the next discussion). This version is the "final" version for now and will be posted so it can be referred to by others.

2. Overall plan for p-pbar cancellation -- Jim Steimel

- Jim showed some slides on the criteria that he proposes that we should use to determine whether the p-pbar separation technique will work.

His first slide showed the effect of a y offset in a x BPM and we concluded (I think) that a measurement in only one BPM would produce a measurement of a surface in space and not a unique x position. Information from another BPM or from some knowledge of the beam trajectory will be needed to produce a final precise measurement.

Jim's second slide:

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Proton Deconvolution Success

Prove that we can mathematically reduce effect of protons on pbar end of pickup, so that we have less than .25mm of error in pbar position for all proton positions at max proton intensity.

If we can reduce the proton signal, process of measuring pbars is the same for protons.

Calibrating pbar BPMs will require pbar only stores.

Will allow one week after retrieving data from dedicated BPM study to determine viability of deconvolution method.

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We discussed a grid study using protons only to measure the signal on the antiproton pickups as a function of position. Not sure when this study will occur. Rob K. would like to see two BPMs instrumented (x and y) for this study. We probably want to have a damper board in parallel at first, switching to Echotek only for final measurements.

3. Calibration (postponed to a future meeting)

4. AOB.

- BLM readout is something that we have to understand reasonably soon. The main reason is that we will remove the current BLM readout when we install the new BPM readout.

- Near term schedule:

Wednesday, February 4, 9:00 A.M. FCC1
CD Projects Status Report

Wednesday, February 4, 11:00 A.M. (note time -- back
to 11:00)

Thursday, February 5, 1:30 P.M. (Timing discussion)

