

Minutes, 12/29/03 Tevatron BPM Upgrade Meeting
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Monday, December 29, 2003 meeting:

We met on Monday morning to review the status of the project and to discuss some near-term future steps. We spent some time on:

1. Status of measurements, preparation for more.
2. Discussion of requirements/resolution.
3. Short subproject reports.
4. AOB.

1. Status of measurements, preparation for more.

The demise of the Tevatron beam on Saturday, December 20, has not been helpful in our ability to collect more measurements. Nevertheless, the situation is the following:

- An Echotek (Recycler style) board with a 53 MHz filter and appropriate digital down converter is hooked up in A1 and is ready to take data.

- Jim Steimel will talk to Bob Webber about getting a scope into the same service building.

- A damper board will be installed next week, according to an email from Bob Webber.

- The DSR board is meant to go into A1 as well.

2. Discussion of requirements/resolution

The above discussion led to an interesting discussion of what it is we are trying to accomplish with the measurements in terms of satisfying the just-finished review and preparing for the upcoming Temple and DOE reviews, and of course in procuring the Echotek boards. There was a question raised by Joel Butler of just exactly what it is we will measure to satisfy the "Electronics Choice" review. This led to a discussion of what is meant by a 7 micron rms

resolution and how it is we could measure it. Also how important that it is 7 microns and not 5 or 10. Some ideas were kicked around about using a 3-bump at something like 200 microns and then another at 10% of that. The details will have to be worked out in order that we can show to the committee that we do indeed have a system that is adequate (i.e. meets the requirements or is significantly (x10?) better than the current system).

Another idea was to compare the response of the Echotek board in A1 to a functioning BPM with the old electronics. This should be straightforward and should also be useful in seeing the improvement with the Echotek.

We had a short discussion about why we are upgrading the electronics in the first place. Issues include the least-count/resolution of the current 8 bit system (150 microns), the reliability of the present system which includes the overall system integrity given the changes to the timing and controls over the years.

Jim Steimel:

- Plans to work on the simulation of the pickups and their response and coupling.
- Will work on the calibration system specification.

Bakul Banerjee:

- Our wbs is integrated into the overall Run 2 project. Joel Butler mentioned that we will need an overall schedule and cost for the Temple review and certainly for us to see the week before that (the week of Jan 12).

Mark Bowden:

- Will work on the timing system. Needs to talk to Jim Steimel to start discussions.

Luciano Piccoli and Dehong Zhang:

- Working on the software specification document now that a hardware choice/direction has been made. Expect a new one soon.

- Dehong is working with Brian Chase and his group on the DSR board programming and the separation of p and pbar signals. On the bench a strong position dependence is seen on the proton signal feeddown into the pbar end of the pickup.

3. Plans for the review.

- The Temple review is actually very soon, give that most people are away until Jan 5. We have 2 weeks to prepare, the weeks of Jan 5 and Jan 12. Some of the specific needs for the review are:

1. Plans/outline for a calibration/test system.
2. Plans/outline for a timing system.
3. A commissioning plan (in whatever state of readiness we can have by that time).
4. The measurements that we can get and interpret.