Minutes of the 222nd Energy Calibration Meeting held on 22 May 2003

Present: Bernd Dehning, Daniel Kramer, Pete Renton (by phone/part time), Eric Torrence, Pippa Wells (part time), Daniel Kramer, Mike Hildreth (by phone/part time), Guy Wilkinson

Apologies: Jorg Wenninger, Didier Cornuet.

1 News since last meeting

Since meeting 221, back in November last year, the following progress has been made:

- The making of final energy files (modulo offsets) and release to the collaborations (see memo0201).
- The starting of lab tests of the BPM readout cards by Daniel Kramer, a technical student working with Bernd (see itemm 3).
- The completion by Guy of the spectrometer analysis. (Although others may think otherwise!)
- Work between Anke, Jorg and Guy on drafting the Q_s chapter.
- A near complete flux loop analysis and writeup from Pete.
- The release of a new draft (see item 2).

2 Discussion on draft

A new draft ('2a') was released shortly before the meeting, and updated immediately afterwards in minor places ('2b'). Comments are required on this to Guy by Friday 13 June, most particularly on sections 6, 8 and 9. Some issues were discussed during the meeting:

- The layout was agreed to be OK. The merits were discussed of adding a short section on the implications for the final E_b error on m_w. It was agreed that this was an interesting idea.
- Guy will ask Jorg to draft the RF sawtooth section (section 5). This will cover sawtooth issues, plus error assignment for the physics energy files and the spectrometer. Mike will then comment before the draft is released.

- There is still uncertainty on how best to use the comparison of the FL and NMR residuals in the 40-60 GeV region (figure 8) for the error assignment. Also, the question of how the test of the linearity in the high energy region (section 6.2) can be used in the comparison of FL, spectrometer and Q_s was identified as one without a clear answer. We will try and resolve these queries before the next meeting.

- Section 7, on the spectrometer apparatus, was considered a nice first attempt, but maybe a little too terse. Guy undertook to expand the mapping section, in collaboration with Federico. The meeting again stated it would be good to have a dedicated NIM paper on this work. Guy will consider this...

The outstanding analysis work is as follows:

- The analysis of the 'BFS calibration experiments'.

- The assignment of the model errors.

- Deciding on the best way on how best to combine the FL, spectrometer and Q_s (section 10).

We will try hard to cover these items for the next meeting.

3 BPM readout cards bench tests

The meeting welcomed Daniel Kramer, who gave a summary of his work at CERN since the New Year.

Prior to the 2000 run, John, Esther and Bernd worked on lab tests of the BPM readout cards (see DIPAC 2001 conference submission), using a simulator to generate a signal of the same amplitude, width and frequency as produced by the LEP beams. Daniel is repeating these tests to see if the performance of the cards is the same as prior to installation. He now has the testing apparatus up and running as previously.

He has investigated dependencies on rack temperature and beam current. He has studied the behaviour of cross-talk between the cards. His preliminary conclusions are summarised in the attached transparencies. He has a list of further topics to study, including bunch length dependence and stability with time.

4 Next meeting

June 25 or 26th – to be confirmed.

Guy Wilkinson, 25 May 2003.