Minutes of the 207th Energy Calibration Meeting held on 16 March 2001

1 MBI re-mapping

Federico Roncarolo described the hard work invested over the past weeks by the magnet team in preparing for the MBI remapping. All is essentially ready, and indeed some preliminary test maps were made soon after the meeting.

Federico himself is analysing the data from the first mapping campaign and applying the results to the tunnel data from the 2000 spectrometer ramps. Comparing Federico's estimate of the integrated field with that coming from the model developed with the initial analysis will be an important cross-check of the procedure.

2 BPM analysis

Bernd Dehning presented plots showing the stability of the spectrometer results under various changes in the input assumptions. He examined various effects. An important observation is that the internal inconsistency of the BPMs is systematic, in that a given combination of BPMs (almost) always gives an energy estimate biased in a particular sense. Another interesting discovery is that the value and consistency of the result has a significant dependence on our knowledge of the *absolute* BPM gain scale – however this effect is not sufficient to explain our problems.

Bernd has also analysed the change in triplet residual when ramping to high energy for both the left and right hand arms of the spectrometer. This is an alternative way of studying the BPM inconsistency in an 'arm sensitive' manner. However no firm conclusions can yet be drawn.

3 RF sawtooth model

The comparisons in the sawtooth results between Joerg Wenninger and Mike Hildreth have not yet fully converged, although the differences are small. Joerg and Mike will continue to work on this.

Guy has prepared RF data for the 1999 spectrometer fills which Joerg can use to calculate sawtooth corrections. Note that these corrections will have a significant uncertainty, as there are no dedicated RF MDs in 1999 which can be used to constrain the model.

4 Miscellaneous

Joerg has been developing an alternative parameterisation of the Q_s vs V_{RF} dependence, based on matrix methods. He will work with Anke-Susanne Muller on applying this to the Q_s measurements.

Guy announced that the note on the 2000 energy analysis is now available: ‘LEP Energy Working Group 01/01, March 2001’.

5 Next meeting

To be announced.

Guy Wilkinson, 21 March 2001.