Minutes of the 109th Energy Calibration Meeting held on 8 November 1996

Copies of the talks have already been sent to the mailing list for this meeting. For the record, here are brief notes on what was discussed.

1 Recent polarisation measurements

Massimo Placidi showed a table summarising all the energy measurements with resonant depolarisation so far in 1996. The details of earlier measurements from July and August have been examined more thoroughly, and some mirror/Qs sideband resonances are not excluded. The alternative energies are also given in the table. The recent measurements at peak-2 and at 50 GeV are consistent. 12The polarisation measurements are corrected for tides and to the normal physics rf frequency of ...4170 Hz. The flux loop and NMR results must be corrected to this frequency from the central frequency for a meaningful comparison. The correction for the rf frequency is around 0.7 MeV/Hz.

2 Flux loop status

Joerg Wenninger gave an update of the flux loop status. Analysis of the flux loop vs NMR data for a measurement with a series of pauses at each energy is in progress.

3 Corrector tests

Joerg also showed the results of the corrector tests in the recent polarisation MD. They are in agreement with the model predictions at the 30from the previously used $50 \pm 50\%$ correction for 1995 data and $0 \pm 100\%$ correction for 1993.

4 NMR linearity

Mike Koratzinos presented a first look at the NMR4 and NMR8 behaviour in fill 3719 (3–4 November), comparing the energy rise with the two polarisation measurements. These NMR's are in good agreement with the polarisation points. However, it was stated in the following discussion that there is a large scatter in the NMR behaviour. More data will have been analysed soon.

5 Dispersion/Vernier effects for 1996

John Yamartino showed the predicted vertical dispersion at the IP's from MAD for the 161 GeV data. The vertical displacement can be constrained from beam-beam scans and the measured luminosities vs. current. The anticipated error is small (< 1 MeV).

6 NMR data in 1995 and 1996 and temperature effects

Pete Renton showed fits to the 1995 NMR data using the new temperature model. The previous analysis is extended to fit for two temperature coefficients (CT and CTmax). The results for the two temperature coefficients are highly correlated, since for the first eight or so hours of most fills the temperature always rises.

Pete also presented a first look at the Z and 161 GeV data recorded in 1996. There were some problems with "stuck" temperature and NMR values in the database. Fits for the temperature coefficient of each octant have been performed, to examine the scatter of effective coefficients. The desirability of an experiment to measure temperature coefficients in the LEP tunnel was emphasised.

Guy Wilkinson has also looked at this data, examining the energy rise vs. temperature rise, time in fill and time of day. The atypical behaviour of NMR8 is again apparent. The effective temperature coefficient is different in the "quiet" period compared to all data.

Angelika Drees compared the 13 Z fills in 1996 with the 1995 Z fills (without bending modulation). The temperature variation in 1996 is much less. The temperature model is able to explain much of the rise seen in 1996 data.

7 Next Meeting

The next meeting will be at 15:00 on Friday 15 November in the pavillon, for Mike Hildreth's LEPC practice talk. An attempt will be made to fill in as many gaps as possible in the 1996 analysis before then. The following meeting will be on Friday 22 November.

Pippa Wells, 22 November 1996.