Minutes of the 155th Energy Calibration Meeting held on 5 June 1998

1 Status of new energy files for 1997

Guy Wilkinson reported that new energy files have been produced and checks are in progress. The changes in the last week are:

- The fit to the polarisation data is now made to all fills simultaneously (including the 1 point fills) which gives the appropriate relative weights to the different fills.
- The averaging over the NMR's for the initial energy in a fill now gives equal weight to each NMR (while the rise during a fill is calculated giving equal weight to each octant).

Chris Hawkes has reported a shift of -11 MeV in the average centre-of-mass energy in physics when switching from the Moriond files to these files, which agrees reasonably with what Guy expected.

Anke Muller sees a discrepency in the initial energies of about 11MeV in Ebeam. This is not explained by the subset of polarisation fills used. Checks will be made to see whether the origin of the difference. Anke's normalisation procedure is to first fit each NMR to the flux loop over the full range, and to average over the NMR's. The field measured by this average NMR is then fit to the polarisation data. Anke will try restricting the first stage fits to the flux loop data to the 40-55 GeV range.

If Guy uses the normalisation coefficients from Peter Renton then the agreement in average physics energy is about 2 MeV.

It emerged after the meeting that details of the QFQD correction also need to be changed (up to 3 MeV effect).

2 Addentum to last minutes

Peter Renton finds the difference between the last FL in 1997 (4434-2) and the first is 27.7 ± 5.2 MeV. This is the uncorrelated part i.e. the change in each of the 9 common NMRS between these fills wrt to the mean for that NMR for all 1997 fills. This is a measure of the significance of the change throughout the year.

3 Status of the spectrometer

Eric Torrence reported on the data from the spectrometer phase 1. Most of the expected equipment for this year is in place, but the electronics for the BPM's has been delayed.

The temperatures showed only small excursions in the Z running. Now we've switched to high energy running there are larger changes. The stretched wire system for monitoring the mechanical stability shows a long term drift with a time scale of several hours, but also unexplained sharp jumps of a few microns. These apparent jumps persist in the triplet residuals at the level of about 0.5 to 1 micron, so there is some relative movement.

Apart from the jumps, the wires show oscillations at a frequency a little below 1Hz (compared to the natural frequency of around 10Hz).

A flux gate has been installed 6m along from the spectrometer to measure the field in the tunnel. The x-y-z axes are not quite sorted out yet. The flux gate sees field changes of a few hundred mG in the ramp.

4 Next meeting

The next meeting will be on Friday 12 June at 15:00 in the Pavillon. We will first discuss the analysis of radiative return events, and then continue the review of energy files and errors for the 1997 data.

Pippa Wells, 6 June 1998