Minutes of the 211th Energy Calibration Meeting held on 14 June 2001

1 MBI re-mapping

Federico Roncarolo gave an update on the mapping and mapping analysis.

Several hundred maps have now been taken. Since the last meeting Federico has updated his analysis to apply both offset and gain corrections to the hall probes, and his refined his temperature model such that it is very similar to that developed by Juan Palacios for the ISR data. The effective temperature coefficient Federico finds from the data is $\sim 8 \times 10^{-5}$, which is the same as that determined previously.

Maps have been recorded with the arm displaced horizontally. Only small changes are seen, but a quantitative comparison with similar studies made in the ISR has yet to be made.

As a systematic check on the knowledge and stability of the end field, additional $\mu-$metal was added to the arms to effectively cut off the field 1 cm closer to the magnet. No significant change in residual is found for these maps, indicating that the modelling is rather insensitive to this detail, as had been expected. It cannot explain the few 10^{-5} shift seen between the ISR and now. A possible clue to the source of this shift lies in differences for the end field in very localised positions when present and ISR maps are compared, pointing perhaps to an environmental contribution. (This is a very preliminary discovery and no plot is included in the transparency copies.)

Studies have been made on the non-linearity of the ruler, and no differences found with respect to the ISR.

Federico confirmed that he is able to fit the ISR data and obtain flat residuals rather than the 'banana' seen in the standard model. The difference is due to the range over which the data from the type 1 and type 2 probes are fit.

Tasks which remain are to:

- Compare the relative readings of the reference probes now, in the tunnel, and in the ISR
- Study the environmental field in the present laboratory
- Arrive at a final model, and variants on this model, based on the ISR data, the present data and the complete data set
- Attempt to make an estimate of the field integral for the *horizontal* component
- Write everything up!

2 Flux loop studies

Pete Renton presented a preliminary analysis of the whole ensemble of the flux loop data. He has modified his program so that data from all years can be analysed simulateously. He showed first attempts at a selection of 'final' plots.

The main impression from this analysis is one of stability with time. Each NMR possesses a very individual high energy residual which does not fluctuate much between the years.

The mean value of the residual for the whole data set is -7 ± 17 MeV. This value does not change significantly if details in the analysis, such as the precise window over which the fit is made, are varied.

Pete showed how the residual varies as the energy rises from 75 to 110 GeV. There is evidence that it does evolve in a systematic manner, but this dependence is weak, at ≤ 5 MeV over the considered interval.

There was discussion in the meeting on how the results should be used to set a systematic error. No firm conclusion was reached, but it was agreed that when analysed with conventional statistical procedures a value of less than 15 MeV would be arrived at.

3 Any Other Business

Guy Wilkinson announced that a full set of NMR model energy values had been provided to Anke-Susanne Muller for use in her Q_s analysis.

4 Next meeting

To be announced.

Guy Wilkinson, 22 June 2001.