Minutes of the 97th Energy Calibration Meeting held on 28 June 1996 at 10:30

This meeting was dedicated to the 1996 energy measurement. The following notes supplement the copies of transparencies.

1 Polarisation group plans – Massimo Placidi

Massimo summarised the plans of the polarisation group for end of fill and dedicated MD's to look for polarisation first at the Z and then at higher energies. The first attempt to find polarisation may take some time since the LEP energy is not well known right now. For example, the matching between the SPS and LEP energies at injection was wrong by 1% at startup.

2 Flux loop –Joerg Wenninger

Up to now the flux loop has needed the standard deGauss cycle and a special negative cycle to get the absolute calibration. The plan for this year is to make relative measurements using the standard deGauss cycle about twice a week, and only make the full old-style flux loop measurement once or twice a month. The reduced flux loop cycle has already been tested. The standard old-style cycle is not yet ready.

3 NMR status and Logging the current on the beampipe in 96? – Bernd Dehning

The status of the probes is as follows: In the reference magnet, NMRREF works at high field (80GeV) only, NMRVAC works at low field (45GeV) only. In the tunnel, the EPROMS for the strings of probes must be updated and two more probes are to be installed in IP5. So far 14 probes work 45 and 80GeV, but only probes 4 and 8 are logged in the database. Enrico is logging all the probes privately.

For the new temperature probes, the hardware is now at CERN and will be installed when possible. The existing probes work, but the extra digit for the readout has not yet been implemented.

Recording of the current on the beam pipe was discussed. Bernd will look into the possibility of recording the rms every few minutes.

The test bench will be used to optimise the bending modulation to be used for 1996 running

4 Vernier scans/deflection scans – Joerg Wenninger

The vernier scans using luminosity at each point have been commissioned. The deflection scans using new BOM software are being worked on.

The aim will be to do at least one luminosity scan per IP per fill to start with, with an extra scan at at least 1 IP at the end of fill to assess the stability.

5 SC RF status – Ernst Peschardt

Ernst reminded us of the RF terminology. 1729 MV total voltage is now available, and is reasonably symmetrically distributed around the 4IP's. 1380 MV are needed to get the beams to 80.5GeV, so there is a sensible safety margin to run efficiently at this energy. 4 klystrons remain to be phased in. There is only 1 sick cavity out of the 144 SC cavities installed.

RF information is available on teletext page 151.

6 RF model for LEP 2 – Mike Hildreth

The RF model for LEP2 has to take into account that for the first time there are cavities at all 4 even IP's. The total number of units to monitor and the energy loss per turn have both increased, so the logging has become even more important.

The RF model has been updated to calculate the energy loss at LEP2, but the precise alignments etc. have not yet been input.

Monitoring is running automatically at ALEPH already, and will be running at OPAL soon.

7 Logging and monitoring – Guy Wilkinson

All the important quantities except for the new NMR data are now being logged in the measurement database. The watchdog program is being debugged and tuned. SQL calls to read the new tables are needed.

8 Analysis plans for 96 – Mike Koratzinos

Mike reminded the group of his analysis framework, which he hopes to continue to support. This framework interrogates the database and provides ascii files with energies from NMR's etc. to which some fixes are needed by hand. The dipole model and RF model are the most tricky parts of the analysis. The programs need to be ported from CERNVM to a living computer soon.

9 Plans of the Oxford group – Guy Wilkinson

The Oxford group also have an analysis chain that results in ascii files, with routines that allow simple reading of these files. Guy hopes to continue to work on this (with Oxford and later as a CERN fellow). Pete Renton will also continue to work. However, in the first instance the Oxford groups main focus will be finishing the 1995 analysis.

10 Discussion

The main technical tasks seem to be covered. New people wanting to be involved in the analysis are encouraged to talk to Mike K. and to Guy W. When the 1993-1995 analysis is at a less critical stage, there will be more discussion of how to set things up for 1996.

11 Next Meeting

10:30 on Friday 5 July.

Pippa Wells, 3 July 1996.