

Report of week 24-25 (June 11-19, 2004) coordinator Martin Faessler

Summary

No beam for the first 3 days. Thereafter hadron beam during daytime, used for first tuning of the hadron beam and for CEDAR tests, also allowing to study the rates in the spectrometer under the unusual condition where we have a target of 1.5 interaction length thickness. During night, change over to muon beam in order to set up, tune and calibrate components for the initial hadron run and to perform detector and DAQ studies.

Beam

No beam till June 14, 8h00 (end of scrubbing). From thereon "25ns beam" [SPS spill of 2.2 s length consists of about 100000 packets separated by 23 microseconds, each 1.2 microseconds long; each packet consists of 48 bunches separated by 23 ns, each a few ns long].

During daytime we had 190 GeV positive beam, intensity 1 Million per spill, (65% p with remaining 35% π^+ , few K^+), SM2 set to 5000A. During night we used a positive muon beam (low intensity) of 160 GeV energy, SM2 set to 4000A.

The hadron beam was tuned by Lau Gatignon June 25 and 16. Main goal was, to make it parallel in the 2 CEDAR counter. An estimated 10 microrad divergence was reached, good enough for the CEDARs.

File name <239>M2.51, target head #4.

Other beam studies, see comments 8347: study of spill structure [Juergen] and comment 8369: study of scraper #5 influence on halo [Mario]

CEDAR

CEDAR 1 was aligned, tuned, pressure scan done. 1 PM to be exchanged. For CEDAR 2 the bad pressure transducer (reads out 4.8 bar when it was 10. bar) prevented any tuning. Diaphragm can not be varied, moreover, 2 PMs have to be replaced.

See the report by Jens Spanggaard, this meeting.

Hadron set up preparation

A provisional 7mm (50%Xrad) copper target between Silicon 1 and 2, the multiplicity trigger scintillator between Silicon 2 and 5, beam killer counters 1,2,3 and the Primakoff hodoscope were installed. The hadron beam tuned and the CEDARs tested. The target veto box tested and tuned with muons. The target veto box sits on the platform next to the silicons. The ECAL2 photomultiplier gains were adjusted and the lead glass yields measured. Data taken with hadron beam and beam trigger (minimum bias) and others. See the report by Andrea F. this meeting.

Target

TE (Thermal equilibrium) calibration (started June 9) continued until Monday morning (June 14). ^4He was removed from the mixing chamber June 15. The next day, $^3\text{He}/^4\text{He}$ mix was condensed and polarization started in the evening. Main goal: testing the new Impatt diode microwave system. 35% polarization at June 17, evening. New system behaves very well.

Silicon

Silicon stations 1,2,5 were installed and operating. Sili5V had a problem with a bad cable which was solved. (Comment 8304[Rita]).

BM1-6 and Scifi –J/D

2 catches had to be replaced # 216, 161. Origin of failure unclear, perhaps short circuit at one of the channels [Christian].

Trigger and Veto

Problem with PM base in HM04y1 fixed, see comments 8358, 8366 [Juergen].

MicroMega

Many problems at the beginning of the period with the read out electronics (digital part). All problems solved. For the hadron beam (about 1 Million of interactions per spill) the HV could be raised to 92.5% of the nominal value for the muon beam, while keeping the sparking rate at an acceptable level.

GEM

Problems with loading of GEM7 fixed.

DC

Strange gas mixture problem during June 12 – 14 was solved Monday, June 14: it was due to a bad grounding in PLC-3. See comment 8296 [Stephane].

Straw

Noise tests, see comments 8275-8278, 8280, 8281, 8300.

HV trips at normal rate, a few per day. Straw module was moved back to nominal position after work at RICH was finished, June 16.

MWPC

W45

MuonWall 1,2

RICH

2 Bora cards replaced June 15.

HCAL1,2

ECAL2

Adjustment of photomultiplier gains (using LED signals) removing/adding resistors from/to the pm bases, for about 200 channels. HV alarm connected to ELMB. (Since HV trips occur 3-4 times during a week, ECAL2 HV readout should be integrated in slow control.) Measuring the gains from ADC records. Trigger studies (summation) started June 17.

DAQ

(24 comments between 11 to 16 June). All EVBs and ROBs ran on a new kernel LINUX 2.4.26 from June 10 on. June 14, after (too) many crashes the pccorbs were switched back to the LINUX kernel 2.4.18. June 15 a new patched version of LINUX 2.4.26 was installed on all ROBs and EVBS but not activated. June 17: EVBs on patched version 2.4.26 and 3 ROBs for testing purpose. June 18: all ROBS on new kernel [Christian].

There are 2 new TDCs read out from beam killer counters BK, CEDARs and target veto box.

DCS

Data taken

Runs 36006 - 36331 June 18, 13h00. Mostly with recording disabled for DAQ and detector tests. Some runs with hadron beam and mixed muon trigger some runs with specific hadron trigger (BT).

Observations and wishes of the weekly coordinator

Compass has an excellent infrastructure. It is exciting to spend days and part of the nights in the counting room observing how the individuals of this large team work together towards an ambitious physics goal. And how this work is organized and coordinated by an excellent infrastructure.

The electronic logbook is one of the many tools and rules which are part of the infrastructure (as is the weekly coordinator whose main role is to care for rapid communication between the various groups and shifts and who apart from talking with the people often looks into the electronic logbook).

Here comes the wish: The shift summary is a very useful feature and it is an excellent custom to complete it. But it does not replace the general comments. It is extremely helpful to be able to search for general comments concerning one detector type (this search is one of the many beautiful features of the electronic logbook). During the last week, many activities were not recorded in general comments but only in the shift summary or not at all. They should have been! Do it in future.