CH/Doc/96/01

Minutes

Charissa@GANIL Meeting

Meeting held on: 17 June 1996

Meeting held at: Birmingham

Present: N.Clarke, M.Freer, J.Winfield, W.Catford

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Minutes

1. **Aims:**

   We want to record deuterons from p(^{13}B,^{12}B)d in coincidence with SPEG, and to measure their positions.

   The angular coverage will be as originally designed by JSW, and will not take account of the angular coverage required for Simone's (d,t) for which the tritons will be more widely dispersed and only 2 to 4 MeV. Detectors that could possibly mask SPEG acceptance to be removable to larger angles.

   We want the computer acquisition code written in time for alpha testing before the parasitic beam.

   The parasitic beam is due 5–11 Sep and the main beam 13–22 Sep. The access time to SPEG is Thursday 29 Aug until Wed 4 Sep, following Von Oertzen's run 21–28 Aug. The array setup and alpha testing will need to be done 29 Aug–4 Sep.

   We may be able to get some testing witht he parasitic beam but the species are not ideal.

2. **Detectors:**

   We need 10 of the sheet resistance detectors for the experiment, and two spares. The detectors are available in Birmingham: Hamamatsu 400 μm exist, and Eurisys 500 μm awaiting July delivery. The mounts are the same. They should give good positions down to 2 MeV with 1K offset resistors.

3. **Preamplifiers:**

   Nobby showed a rack mounted preamp unit in prototype. There are 5 boards each with 8 preamp channels, in each unit. One board includes bias and holds the 8 preamps for 8 detector backs (energy signal). The other 4 boards give the 32 signals for the 8×4 corners.

   The boards include 1KΩ offset resistors for all corners (changeable by jumper to 2K).

   We will need two complete chassis (16 detectors worth). There will likely be one further unit to provide the preamp voltage rails with power. $\boxed{\text{NMC}}$

4. **Amplifiers:**

   We will need 64 channels of charissa amplifiers (two crates). $\boxed{\text{MF}}$

   These are expected to be built (but not yet tested) by mid July, and completed by mid August, which is when they are needed.

   The amplifiers will be mounted in the 19 inch racks to the left of the main SPEG electronics.

   The amplifiers are controlled through the crate, through RS485 from a PC which will likely be supplied from Birmingham.

5. **Bias Supplies:**

   There are 8 compensated Charissa supplies at Birmingham with their crates and 2 extra NIM channels can be found either at Birmingham or Surrey.

6. **ADCs:**

   We plan to use the AD812 octal ADCs with Lemo inputs, from GANIL pool. We need to check with Marek/LISE3 for availability, since the isomer experiments are running at the same time. $\boxed{\text{JSW}}$

   We need to see whether we need to find another CAMAC crate. The ADCs also need little cables fixing to the multipin input, for the gate pulse.

7. **Electronics Rack for G3 target room:**

   We need a 19 inch rack next to the chamber, to mount:
   2 preamp chassis, 1 preamp power supply chassis, 1 charissa bias supply rack, 1 NIM bin for bias supplies and test electronics (NIMbin to be found at GANIL). $\boxed{\text{JSW}}$

8. **Detector Mounts:**

   On the inner couronne: 8 detectors in two sideways T's for wider angles.

   (On the middle couronne: galette chambre beam tracking detector)

   On the outermost couronne: inner two detectors, above and below the beam, cantilevered in to a distance of approx 450 mm.

Beam height above couronne is 600 mm.

Mounts to be arranged in Birmingham; GANIL/LPC to sort out the connection to the couronne. [MF,JSW]

9. **Cables:**

   The various cable needs were discussed; the notes below take into account information learnt since the meeting where it supercedes earlier speculations.

   detectors ⟶ coax cable:
   to be determined. Preferably some sort of connection that can be broken in order to install the detector mounts but possibly soldered directly. [NMC,JSW]

   coax cable ⟶ vacuum flange:
   at the feedthrough end, an INDRA type connector with cooax soldered according to standard INDRA design. [JSW]

   VACUUM FEEDTHROUGH:
   existing INDRA design flange with multiway feedthroughs. Mounted on side of vacuum chamber, to right of beam. [JSW]

   vacuum flange ⟶ preamplifiers:
   most likely twisted pair/flat ribbon cable soldered to INDRA connector at flange end, and crimped to ribbon connector at preamp end. [NMC,JSW]

   preamplifiers ⟶ DataAc room/amplifiers:
   existing cable run of 100 cooax cables with BNC's at each end, arriving in the data ac room near where we want the amplifier racks. [JSW]

   DataAc room/amplifiers ⟶ ADCs:
   existing 70 Lemo–Lemo cables presently at Birmingham. [NMC]

10. **Timing measurements:**
    These weren't discussed, but we should probably have TDCs, which we will need to provide (two octal units). [WNC]

11. **Trigger Logic:**
    We need a silicon trigger for calibrations and efficiency measurements. We also need to set bits in a pattern register, which can be used to work out which ADCs to read, in the on-line code. We will need two octal shapers and two octal delay units returned from the ANU. [WNC]

12. **Computer Code:**
    To the existing code, we need to add code to interogate the hit pattern register and then read the appropriate silicon ADCs, TDCs and calculate positions. This will need to be discussed with GANIL data acquisition people and tested prior to the alpha tests scheduled for 29 August. [WNC]

13. **Alpha source tests:**
    detectors and code to be tested in SPEG chamber in the week 29 Aug–4 Sep.

14. **Manpower:**
WNC available, along with Neil Curtis and probably Mark Shawcross.
MF available for alpha tests, (parasitic beam time?) and the part of the run using the Si detectors (subject to new baby!).
NMC not available for parasitic beamtime, but should be OK for run.
Steve Chappell and Doug Watson hopefully available: contact Steve about the setting up period. WNC

15. **Targets:**
See whether Patricia can provide a suitable large area $(CH_2)_n$ target of 5–6 $\mu g/cm^2$. JSW

16. **British power sockets:**
some may be required. WNC

17. **Finally:**
see also – notes from meeting at GANIL on 2 July 1996, with Orsay people.

W.N. Catford July 4, 1996