

Minutes of WP-meeting 148

Attendance:

DESY: Leif Jönsson, Klaus Zenker, Ralf Diener, Isa Heinze

Phone: Jan Timmermans, Ron Settles, Stefano Caiazza, Martin Killenberg, Madhu Dixit, Akira Sugiyama, Jochen Kaminski

PCMAG/LP setup, test beam:

Ralf: PCMAG

- Yasuhiro Makida arrived in the morning and PCMAG and compressors were unpacked in front of the test beam area (Masanori Kawai arrived at noon due to travel problems).
- PCMAG and components looked OK and read-out of electronic shock-watches showed no excessive values of movement. (Information from Friday: The value was 3.1g, which is high, but still acceptable.)
- Power lines for the compressors were installed at the same time (and plugs for easy handling connected to the compressors).
- Cooling water lines still not fully finished (due to illness of the plumber), but work resumed this week.
- Plan for Friday:
 - Mount holding structure for LP into the PCMAG
 - Mount PCMAG into the movable stage
 - Discuss further steps and detailed working plan for end of May (who provides/prepares which parts)

Movable Stage:

- Finishing work being done on cabling and adjusting of end switches being done
- Steering/controlling software ready; first tests done.

LP:

- The two HV cables (inside LP) to cathode and field strips better insulated with shrinking tube
- First stand-alone test of connector and cables (outside the LP) up to 30kV successful; HV test in field cage only possible with real anode end plate (currently a GRP cover is mounted)
- Next steps:
 - Adjust and align cathode plate (was loose when we opened it)
 - Build cables and HV plug into cathode plate
 - Attach modified anode end plate (includes now measuring ring for rotation) with new HV connectors
 - HV test of fully assembled LP
 - Possibly: covering cathode cover (GRP plate) with metal mesh to ensure a defined potential on this side (can easily be done after the above steps)

Discussion on electronics:

Madhu remarked with regard to the GdSP parameters, that the parameter choice should be done with a broad view on many aspects. This means that the discussion on the shaping time should not only be based on the longitudinal spatial resolution, but also the S/N, the power consumption and r/ϕ -resolution should be taken into account. Some of these will or could be negatively influenced by a short shaping time and/or high digitization frequency. The transverse spatial resolution (r/ϕ) and the S/N for example could be degraded, since the number of primary electrons is artificially reduced by a shorter shaping time cutting away electrons delayed by diffusion. The loss in S/N could be compensated by a higher gas gain, which is unfavorable for other reasons. The Micromegas group has also done some

measurements with different shaping time (100ns – 500ns) and some results (r/ϕ -resolution) was presented in the last collaboration meeting by Paul and Madhu. Madhu thinks that a shaping time of 100 ns, digitization frequency of 25 MHz and a 10 bit ADC would give good results with the Micromegas modules, but would not go to slower digitization frequencies. More information, however, may be needed to give definite answers.

All participants agreed that it would be a good idea to use the Micromegas and GEM modules with the same readout-electronics. Possibly an old Micromegas module could be used with a small PCB as connector adapter.

AOB:

The next meeting will take place on May 3rd. As particular discussion topic the cooling was suggested and a continuation of the discussion on GdSP parameters.