

Minutes of WP-meeting 197

Attendance:

DESY: Andrii Chaus, Ralf Diener, Leif Jönsson, Claus Kleinwort, Felix Müller, Astrid Münnich, Volker Prahl, Klaus Zenker

Fuzebox: David Attie, Deb Sankar Bhattacharya, Paul Colas, Serguei Ganjour, Jochen Kaminski, Takeshi Matsuda, Martin Rogowski, Amir Shirazi, Ron Settles, Jan Timmermans

General News:

Astrid's abstract was accepted for the ICHEP, which is at the beginning of July. Please, send Astrid your latest results, so she can prepare the presentation.

Paul has heard interest in making a common test beam of various ILD subdetectors. It is discussed to perform this test at CERN (SPS), where also a high magnetic field is available. A complete slice of the ILD detector could be tested and thus the performance of the particle flow technique. But it is not yet known, if the TPC should also be included, but we should consider to make our DAQ compatible to a common DAQ.

Paul also observed that there is a workshop on tracker mechanics in parallel to our collaboration meeting at DESY. There are some interesting new technologies being developed and discussed in this meeting – for example the Fiber Bragg Grating sensors. George Viehauser is organizing this meeting. Astrid mentioned, that the analysis tools are now also adapted to a rectangular pad geometry and can thus be used for smaller detectors and the pixel readout.

Paul also reported that the scientific council of Saclay will meet on 6.6. and discuss the further participation of Saclay in various HEP projects. Among the support of ILD also a possible use of a TPC in a FCC project may be discussed, which would require a continuous readout mode without gating.

PCMAG/LP setup, test beam:

Volker: PCMAG/TRACI/test beam area:

- The maintenance of PCMAG went well, the cold heads were replaced.
- Preparations for the floor refurbishment have been finished and the magnet is now covered with a foil.
- The support structure is in the mechanical workshop now for modification. The drawings are all done and the production of additional parts will start soon.

LP:

- The new endplate of Dan has returned into focus. Some slight modifications are necessary so the holding ring of the ALTRO electronics can be fixed. Also some HV-tests with dummy modules will be done in the lab, which requires some preparations.

Test beam schedule:

- All of the above-mentioned tasks will be finished in September and then the setup will be available again. However, it is not clear, when the test beam will be available again.

News from the groups:

Takeshi mentioned, that the two GEM-gate grids were tested successfully during one day in April in a 1T magnetic field. Preliminary analysis shows that the electron transmission is close to the expected level (i.e. the optical transparency of about 80 %). However, the analysis has revealed some questions about the method, since the amplifier seemed not as stable as expected. An improved setup with a third gating GEM (produced in an all chemical process) will be tested in July.

Serguei reported on his analysis of the February test beam data. He had a closer look at the z-resolution of the MM-modules. After a short reminder of the test beam setup and the analysis flow, he reported that he used an analytic function similar to the one used by Felix. There are two parameter transformations to determine not the inflection point of the pulse, but the time of the maximum. Also, the parameters β were introduced to describe the rise time by the pulse width α . This function was fitted to the 6 central measurements points of each pulse. A good agreement was reached, which is shown by a small variation in the scatter plot where all pulses are overlaid. T_{rise} was observed to have a shoulder, which is thought to result from channel to channel fluctuations in the calibration. The z-resolution of the MM-data was improved by 25% and is now below 500 μm throughout the detector. In particular, it gives more homogenous results across the module by accounting for channel-by-channel pulse shape variations. Serguei wants to extend the study to the neighboring pads of the main pulse and wants to see the influence of the improved fitting technique on the xy-resolution, where a better charge estimate will probably help also.

AOB:

At the AWLC a discussion with the DOE ministry was scheduled, setting the road for spending during the next 2 years. The outcome along with the P5 report will be discussed in the next WP meeting and the LCTPC-CM.

The next workpackage meeting will take place on June 5th.