

## Minutes of WP-meeting 254

### Attendance:

DESY: Ralf Diener, Ulrich Einhaus, Oleksiy Fedorchuk, Leif Jönsson, Dimitra Tsionou  
Vidyo: Alain Bellerive, Paul Colas, Keisuke Fujii, Serguei Ganjour, Jochen Kaminski, Tomohisa Ogawa, Ron Settles, Akira Sugiyama, Jan Timmermans

### General News:

Jochen reminded that next week there will be the LCWS16 in Morioka. There is a tracking session on Tuesday afternoon dedicated to gaseous tracking. Presentations are given on the first results of the Japanese test beam, the transmission measurements of the gating GEMs, the new GEM modules produced at DESY, the GEM+pads+Timepix readout study by Ulrich and the external silicon tracking by Dimitra. Due to a misunderstanding the presentations on MM have not been scheduled.

### PCMAG/LP setup, test beam:

Ralf: LP:

- Oil had been found on the ALTRO during the Japanese test beam. Since this seems to be possible all the time, an oil filter was installed in the compressor air flow.

### News from the groups:

Ralf reported of the ongoing DESY test beam. The new set of three modules has been produced in time with a newly established stretching and gluing procedure. Measurements of the GEM flatness have been done, but not yet analyzed. All HV modules have been HV tested and have successfully passed the test. The modules are now mounted and also passed the HV test in the LP. Tomorrow the ALTRO will be connected. Data will then be taken until Sunday 11.12, maybe a prolongation of a few days is possible.

Dimitra had been asked by Frank to look into the DD4HEP implementation of the TPC in the Marlin code. She showed the various material definitions of the barrel and endcap region. Dimitra has detected several wrong definitions. In particular the cathode was wrongly implemented as air, and the field cages were too thin. Both the inner and the outer field cage had 0.9 %  $X_0$  only. These and other changes were discussed and will be implemented by Dimitra.

Paul has finished the document on the calibration of the TPC. It is uploaded to the indico web-page. Please, send comments to Paul until Saturday. It will be presented and discussed in Morioka.

Akira has found several samples of the gating GEM which served for gluing tests in Japan. Since several institutes voiced their interest in having samples for tests, Akira will bring them to Morioka and distribute them to Saclay, DESY, Bonn and NIKHEF. The samples are electrically not functional and are framed in 10x10 cm<sup>2</sup> frames.

### AOB:

Ron reported on the ALICE-TPC review report which had taken place two weeks ago. Among standard reports on ion back flow, GEM upgrade etc. a problem was discussed, which might be of interest to LCTPC. In Run 1 and 2 tracks passing close to the right edge of several inner modules are distorted. The the reason for this has not been found yet, though there are strong indications, that the distortions

scale with drift distance and track multiplicity. Therefore, primary charge is responsible and ions lead to the field distortions. If the HV is switched off- no track distortions are observed, however, the distortions do not depend on the gas gain and the gating grid trigger rate. The affected modules could be traced to one production batch. Unfortunately, no remedy has been found and the TPC can not be opened to inspect the modules optically. Ron therefore pointed out, that the ILD-TPC should be accessible like the Aleph and Delphi TPC were. This had turned out to be very helpful, when problems occurred.

The next workpackage meeting will take place on December 15<sup>th</sup>.