

Minutes of WP-meeting 223

Attendance:

DESY: Ulrich Einhaus, Leif Jönsson, Volker Prahl, Dimitra Tsionou

Fuzebox: Deb Sankar Bhattacharya, Paul Colas, Keisuke Fujii, Katsumasa Ikematsu, Jochen Kaminski, Takeshi Matsuda, Rashid Mehdiyev, Felix Müller, Amir Shirazi, Ron Settles, Akira Sugiyama, Jan Timmermans

General News:

2 presentations were accepted for conferences: Deb Sankar is going to the EPS (joined abstract with Dimitra's) and Michael's presentation was accepted for the IEEE.

PCMAG/LP setup, test beam:

Volker: Lifting stage:

- The detailed measurements of the moving stage's positions were done and Volker has received the numbers. He will show the details in the next WPmtg. A laser alignment system is being installed now.

News from the groups:

Deb Sankar gave a report on his analysis comparing the results of modules with carbon loaded kapton (CLK) and black-diamond (BD) resistive layers. There are some significant differences between the two module types: During production of the BD modules a layer of preprag was forgotten and thus the insulating layer of the CLK modules is three times thicker. The capacitance between the resistive layer and the readout pads is higher for the BD modules and also the coupling with the grid is improved. This results in a lower RC, since in both cases the resistance is similar (3-5 M Ω /square). The BD is more robust, the resistivity can be chosen more accurately and being a Japanese product, the availability and import to Japan will be easier (there is an export restriction from US for CLK).

The test beam shows on average more pads hit for BD modules than for CLK (4.33 vs 3.13) which can be explained by the lower RC. The collected charge per hit is higher for BD modules, since the coupling is better and a larger charge is seen by the electronics, but the pulse profile is comparable. Comparing two modules with CLK the results of the spatial resolution are similar, but module5 is slightly better for yet unknown reasons. Comparing the BD to this module, it is still slightly better for short drift distance which could also be explained by the lower RC. For both module types there was also a comparison of the spatial resolution in z for 100ns and 200ns shaping time. In both cases results were the same for short drift distances, but the 200ns was better for longer drift distances. The z resolution is the same for the two CLK modules under study, but the BD is significantly worse (about 100 μ m, which decreases over the drift distance. It seems there is a constant offset. Also for the z-resolution the 100ns shaping time performs better than the 200ns. Leif had observed the same for the ALTRO electronics, where the best performance was reached with 60ns. He thinks if the digitization frequency was higher, even lower shaping time values would perform better.

Katsumasa reported they are expecting the module size GEMgates are expected for mid-August. Next week he will return to Saga and continue with framing assembly and integration tests.

Amir pointed out his presentation during the pixel meeting last week. He is working on the Fast Hough Transformation for on Octoboard. Single tracks can be found with acceptable reliability. But for double tracks separated by 5 mm the algorithm fails sofar. He will also look into Clupatra.

Dimitra said that at DESY measurements of the GEM flatness and the trip studies are ongoing.

AOB:

The next workpackage meeting will take place on July 16th.