Minutes of WP-meeting 243

Attendance:
DESY: Ralf Diener, Ulrich Einhaus, Oleksiy Fedorchuk, Leif Jönsson, Paul Malek, Felix Müller, Dimitra Tsionou
Vidyo: Alain Bellerieve, Paul Colas, Keisuke Fujii, Takahiro Fusayasu, Jochen Kaminski, Amir Shirazi, Ron Settles, Akira Sugiyama, Jan Timmermans

General News:
Jochen went through the agenda of the CM and several preliminary presentations were confirmed. Jochen also mentioned, that he generated an indico event for the CM at the usual site (https://agenda.linearcollider.org/category/26/) and asked everyone who will come in person to register for the CM and the social event on Wednesday evening. This is important to judge the attendance and thus the number of reserved seats for both the CM and at the restaurant.

News from the groups:
Paul M. reported on his studies regarding the flatness of framed GEMs. First studies were performed by Lea Hallermann with 10x10 cm^2 GEMs resulting in the current design of the DESY-GEM module. To improve the performance of the module, Paul has studied the impact of the height variations. The gas amplification remains constant, since the holes don't change, but the electric field above and below the GEM changes modifying the collection and extraction efficiency. These efficiencies depend in the first approximation linearly on the electric field and thus have a limited impact on the dE/dx. But also the field homogeneity in the drift region is impacted by the GEM flatness. The measurements were done with a laser displacement sensor. Paul measured many samples among which several of the current GEMs are. He made height distributions for these measurements. The pictures show a RMS between 70-90 µm. This results in a gain variation between 5-8% per triple GEM stack. Paul produced also several different frame structures with different number of sectors. He glued GEM-like dummy foils on these frames and compared the height fluctuations. As expected designs with larger number of sectors, that is smaller sector sizes and more support bars showed smaller variations. However, the fluctuations between measurements of samples with the same geometry are larger then differences between geometries, the current layout will be kept for the next iteration of the GEM module. Instead Paul investigates new stretching procedures to minimize the height variations. But tests with different stretching forces have not been conclusive yet. Also, a new producer of the ceramic frames has been found. Now, the guard strip can be placed directly on the side of the frame by metallization.

Paul C. mentioned that he will have first meeting with Akira and Claude Vallee tomorrow to discuss the tracking session during the ILD Meeting in Santander.

AOB:
The date of the next workpackage meeting will be discussed during the collaboration meeting.