Minutes of WP-meeting 316

Attendance:
DESY: Leif Jönsson, Oliver Schäfer
Vidyo: Paul Colas, Qi Huirong, Jochen Kaminski, Peter Kluit, Shinya Narita, Ron Settles, Jan Timmermans, Keita Yumino

General News:
Jochen asked about the discussion during the LCWS 2019. Several different aspects were reported. In total 430 people had registered, which was an important symbol of interest for the ILC. Paul said that during the ILD meeting the subgroups were warned, that in case of a green light from Japan a larger number of people would want to join the effort and would be interested in doing new things. So that efforts would not be duplicated and the sofar acquired knowledge would not be lost, the groups should maintain lists of open issues, to which the new groups could be pointed.
During the ILC sessions new schemes of operation were discussed, which include the Z-pole running and higher luminosity. Also the degree of polarization is significantly improved, in particular for the positrons, for which also 80 % are envisioned. The industrial exhibition had 60 participants covering all areas of the project from construction, for superconductive cavities to rf cavities. Most of them were however from Japan and very few from international partners. On the political level also a lot of positive signs were reported. The US has increased its budget for the ILC during the last 3 years and both Chinese and Indian participated in the event. At the end of the LCWS a statement was issued, that the community gathered in Sendai is supporting the ILC as a next project in HEP and hopes for Japan as a host country.
A statement by the Japanese government is not expected before the 20.2.2020. Therefore, it will not be in time for the ranking of the European strategy, which will take place in December.
During the sessions of tracking detectors 5 contributions on TPCs were shown, and the progress reported in the WPmtgs was summarized.
During the ILD meeting on Friday Henri Videau presented the costing of ILD. In these numbers also an estimate for the GEMs option was given. Overall the TPC option is about 25% below the numbers given in the DBD. This is mostly because the R&D costs are not included.
During the excursion a factory was visited, which is close to the train station and which could serve as an ground facility for storing and assembling larger parts. However, the buildings and space is too tight to the largest parts like the cryomodules and the calorimeter modules.

Huironq and Peter presented the case for a pixelTPC at the CEPC. Huironq had presented the work on the CEPC TPC at the LCWS and there will also be a CEPC meeting at Beijing on November 18-20. The operation conditions at the CEPC are more challenging than at the ILC, since there is a continuous beam with a bunch crossing time of 40 ns. At the Higgs energy, the backgrounds are not clear yet, however, it is expected that by smart design of the interaction region this can be kept under control. However, at the Z-peak in particular at the high luminosity mode and with a magnetic field of 2T only, a Z production rate of 5-15 kHz can be expected resulting in 30-120 GZ per year. This can lead to problems with the ion backflow (IBF). Already the primary ions are quite high and currently it seems mandatory that the TPC will be gated. As the Z rate is approximately 10 kHz, it seems possible, that the TPC can be gated between two events. However, many simulation studies are still needed to confirm this. As a readout a pixelTPC is favored, because it gives the necessary low occupancy and spatial resolution.

AOB:
The next workpackage meeting will take place on November 21st.