

Minutes of WP-meeting 388

Attendance:

Zoom: Paul Colas, Klaus Dehmelt, Ralf Diener, Ulrich Einhaus, Jochen Kaminski, Claus Kleinwort, Shinya Narita, Ron Settles, Jan Timmermans, Mingrui Zhao

General News:

Paul reported from the Cracow FCCee-Workshop, which concentrated on physics and detectors only. About 80 people were attending in person (out of 280 registered persons). For the first time, work on MDI and machine backgrounds were presented. So far, machine backgrounds were expected to be very small, but first studies suggest an overwhelming background at the Z-peak, where the number of background tracks is 200 times higher than from Z decays and is mostly the result of beamstrahlung. However, work on optimizing the interaction region has not started yet and the number will hopefully drop significantly, because this rate of tracks would endanger the performance of all subdetectors. Paul's talk was well received (uploaded to indico page of the WPmtg) and the people from IDEA (drift chambers) were asked to present also a study on the space charge induced track distortions.

Mingrui had done a feasibility study of a TPC operation at the Tera-Z in 2017 [2017 JINST 12 P07005]. He is now updating this study to higher luminosities and includes a higher level of details such as the primary ions. In addition he is comparing his results to Keisukes and Sergueis. He has taken into account the 20,000 ions discs, which are the results of many low energetic tracks. The results are valid for the Tera-Z running of both CEPC and FCCee, as the study does not take into account specific machine backgrounds, but the effects of physics events only. He will show first results in the next WPmtg.

Paul also reported the news of the last ILD coordination meeting: Ties has been reelected as spokesperson for another 2-year term, Daniel Jeans is the IA chair and Auguste Besson (Strasbourg) the deputy IA chair. Besides, it was stated that a new MC production run will take place and Mary-Cruz Fouz asked the subdetector representatives which physics samples they will need in the close future to make detector studies. Most requests were from the vertex and the calorimeter communities. There will also be physics samples with $B = 2T$ at the Z-pole. Paul also asked for samples with different pads widths to study the effect of overlapping tracks and the double track resolution.

PCMAG/LP setup, test beam:

Ralf: Test beam schedule:

- The test beam will restart on the 6th of March, but there will be mostly groups from the silicons community (HV-MAPS and pixels) and some calorimeter groups. PCMAG and gas supply were not requested for the first half of the year.

News from the groups:

Jochen was asked about the EIC project. He mentioned that all the 32 GridPix detector has been mounted at Nikhef and that everything is working fine. The detector can be sent to the US soon, but US colleagues are still busy with the commissioning of the sPhenix TPC.

Paul reported that Jurina has returned for some time back to KEK, but will come back to Saclay.

Maxim is now permanently at CERN for one year.

There was a discussion on the heat produced by the readout. If there is no power pulsing, the heat production could be as much as 100kW per endplate, which results in a significant increase in the material budget of the endplate and the service lines. Though the current generation of modules have demonstrated to fulfill the 25% X0 requirement of ILC, they are not been optimized for both a continuous readout and low material budget. So an extrapolation from current modules to the material budget of a continuous readout module for the FCCee or CEPC will require more R&D. It was however agreed that the ions are a more severe issue and that we concentrate on them first.

AOB:

The next workpackage meeting will take place on March 9th.