

Minutes of WP-meeting 352

Attendance:

Zoom: Paul Colas, Ralf Diener, Ulrich Einhaus, Serguei Ganjour, Jochen Kaminski, Claus Kleinwort, Uwe Krämer, Tomohisa Ogawa, Oliver Schäfer, Ron Settles, Akira Sugiyama, Jan Timmermans, Maxim Titov

General News:

Maxim reported, that Alain Bellerive will give the presentation at the EPS conference. Soon the speakers for the IEEE NS/MIC will be announced. Later this year, the speaker's bureau will discuss the conferences for 2022.

Discussion was on Hitoshi Murayama slides during the ILD meeting of July 6th. There, it was mentioned that MEXT has created a new panel to evaluate ILC proponents answers to the SCJ report. MEXT also intends to approach European and the US governments (at the level of formerly established "discussion groups") after receiving the ILC pre-lab proposal from the IDT. The direct funding from MEXT to the ILC pre-lab is highly unlikely in 2022. There was a longer discussion on this topic and in particular Maxim summed up his opinion on the new process. But at this point, there are still many uncertainties and the way to proceed is being discussed within the IDT.

PCMAG/LP setup, test beam:

Ralf: Test beam schedule:

- Ralf reported that the test beam is working well. Currently the T2K group with Paul is taking data until Sunday. Then there will be a 3 weeks summer shutdown. In August there are still a few test beam slots open, but from September onwards it is completely booked. Paul still wants to do a cooling test with TRACI, but he does not need the test beam for this. It could also be done during a downtime.

News from the groups:

Paul said that the conditions during the current test beam are excellent. They closed the gas volume with 1m drift and within 1 day the gas quality was very good with less than 20 ppm of oxygen. The T2K group is taking good data for the last ~10 days and about 1 million events have been recorded, which corresponds to about 1 TByte of data. The test beam will continue until Sunday.

One important observation was made during the test beam: While looking at the event display, it was observed that during low magnetic fields ($B = 0.2$ T) there were strong track distortions. But these were significantly reduced at higher magnetic fields ($B = 1$ T). Currently it is not completely clear why this happens and further analysis is needed. But a favored explanation is an additional $(\omega\tau)^2$ in the solution of the Langevin equation. This term is usually ignored, but because of its strength in the T2K gas mixture at high magnetic fields ($B = 1$ T: $(\omega\tau)^2 = 10$; $B = 3.5$ T: $(\omega\tau)^2=30$) it could be the dominant term, according to which the electrons follow the magnetic field lines instead of the $E \times B$ effect, which is a $\omega\tau$ -term only.

Jan mentioned that there were some data taken during the pixelTPC test beam, where E and B have an offset of 5° and that this effect could be studied with this data.

Akira suggested to study this with Monte Carlo.

AOB:

It was suggested to write a LC-note summarizing the benefits of a TPC + Si tracker versus an all silicon

tracker. Most of the arguments like material budget, cost, dE/dx , pattern recognition and continuous tracking were given in the ILC software meeting February 22-26 in 2016 or at the Krakow ILD meeting, but should be summarized and made publicly accessible and referencable for the future.

The next workpackage meeting will take place on July 22th.