Tracker Meeting Minutes

Time: 2024/6/7 10:00 – 11:45

Place: Room 228 of the multidisciplinary building and online

Participants: Wang Meng, Dong Mingyi, Li Yiming, Li Gang, Wei Wei, Wu Linghui, Zhan Li, Deng Zhi, Hengyu, Huang Shunjia, Liu Kun, Shi Xin, Xu Zijun, Yan Xiongbo, Zhang Junsong, Liu Bo, Fu Chengdong, Fan Yunyun, Fu Jinyu, Zhao Guang, Qi Huirong, Zhang Jian, Chang Yue, Geng Qinglin, Li Mengzhao, Liang Zhijun, She Xin, Zhao Mei, Zhao Yubin

Minutes: Yunyun Fan

The meeting explored topics such as particle motion in a magnetic field, optimization of software simulations, and ways to improve reconstruction efficiency. The meeting also covered issues related to the distribution of detectors, operating temperatures, and future work planning. Finally, the meeting delved into topics such as mechanical support, the flexibility of electronic boards, sensor design, and the integration of mechanical and electronic systems

* **WM:** Discuss the issues of the TDR Document.
* **GQL**：Report the progress of the simulation for the endcap layout. The results show the shorter barrel is better. When the number of the endcap disk is 2 or 3, the difference of the two different dpt/pt is within 1%0

**Discussion：**

**LG:** WM's simulation results contradict GQL's results. WM's results suggest that a shorter barrel is better, while GQL's results suggest that a longer barrel is better.

**WM:** In the simulation, we separate the barrel and the endcap. They don't necessarily have to be combined, which avoids the paradox as understood by Professor LG.

**WM:** I suggest that Professor FCD share the details of the track simulation with LG and GQL.

**ZG:** What is the radius of the disk?

**GQL:** The inner diameter of the disk is Z multiplied by tan(8.1 degrees), and the outer diameter is 500 to 600 millimeters.

**FYY:** How do we reconstruct the trajectory of the helical oscillation?

**LG:** Based on the experience from Belle, we only need to capture one period for reconstruction studies。

FCD：The selection of the new position should not simply follow the 0.99 line of CPC IW, but should instead choose a smaller value based on the available space

* ZG: reported the progress of the TPC detector. The main progress is the update of the dN/dx in CEPCSW. Implemented the dN/dx model for TPC and DCH in CEPCSW. Tests show reasonable performance. A merge request is created.
* ZL：reported the hit rate calculated from the simulation. 38Khz/cm2 in the 2890 mm.

Next step ZL would increase the statistics of the simulation.

* YYF: reported the arrangement optimizaiton of barrel of the ToF & Out track. The optimization thickness is 58 mm in r direction of the barrel. The arrangement of the endcap was showed. On the endcap, the most highest hit rate came from the inner circle from 400mm – 680 mm.

Discussion:

MZ: the wedge sensor design should considered more carefully and discuss the details simulation in the future.

WW: the wedge PCB is not easy to produce and need to estimate the cost of the wedge PCB. The wedge PCB could not be realize.

JYF: how to support the wedge structure should be considered.

* It is recommended to reschedule the meeting to Tuesday afternoon, as meetings are usually held on Monday or Tuesday.