Tracker Meeting Minutes

Time: 2024/3/1 10:00 – 12:20

Participants: 常悦, FAN Yunyun (樊云云), FU Jingyu (付金煜), LI Gang (李刚), LI Yiming (李一鸣), 李瞻, LIANG Zhijun (梁志钧), 刘灿文, GENG Qinglin (耿青林), QI Huirong (祁辉荣), 佘信, SHI Xin (史欣), WANG Meng (王萌), WEI Wei (魏微), XU Zijun (徐子骏), 曾浩, 张瑶, ZHAO Guang (赵光), 赵梅

Minutes: WANG Meng

* WM: introduction
  + The comparison tables of performance and cost for TPC and DC shall be filled up by March 8th.
  + Listed tasked for silicon trackers, including pixel and microstrip.  
    🡺LYM and SX on layout, electronics, and cost  
    🡺LG on fast simulation
  + Discussed a draft layout of tracking system, particularly of the endcap tracker
* QHR: on TPC performance and cost. A few tasks were identified:
  + The same readout pads or pixels shall be used in the comparison table and performance studies.
  + Deterioration of the single-point spatial resolution by beam-related space-charge effect shall be studied and quantified, e.g., by simulation.
  + The raw readout rate will be provided to the electronics group for cost estimation, WW suggested.
  + TPC group shall identify a task-oriented list of tasks and appoint person in charge correspondingly, not a people-oriented list.
* RMQ: PID by physics requirements. There were a lot of discussions and divergent opinions. The necessity of TOF seems having most influences on physics in Z-pole, though a few in Higgs. WM suggested:
  + Prioritize physics benchmarks in Higgs and mark PID relevant ones.
  + Compare the relevant benchmarks for PID with and without TOF.
* FYY: update LGAD based TOF
  + A conceptual design for the outer tracker with 4D capability was presented.
  + WW pointed out that the flex-cable support can not exceed 1 meter. It’s agreed that would be a common issue for all variant OTk technologies and will be addressed later.
  + The pros and cons in comparison with silicon tracker: providing excellent temporal information as well as comparable spatial resolutions; the cost of electronics, however, may be 1 to 2 orders of magnitude higher than that of the latter because of the requirement of accurate timing measurement (WW).
* The next meeting will be held on the next Friday.