

## Minutes: CEPC Reference Detector TDR Meeting in Feb 25, 2025

Attendance: Xiaoyan Ma, Jingyu Fu, Shengsen Sun, Linghui WU, Weidong Li, Miao He, Feipeng Ning, Yong Liu, Zhijun Liang, Sen Qian, Yiming Li, Zheng Wang, Huirong Qi, Quan Ji, Haoyu Shi, Qi Yan, Wei Wei, Jingbo Ye, Mingshui Chen, Fangyi Guo, Boping Chen, Jingzhou Zhao, Huaqiao Zhang, Zhaoru

Remotely: Guang Zhao, Gang Li, Haijun Yang, Hengne Li, Hou Zhilong, Jianchun Wang, Kaili Zhang, Lei Zhang, Mei Zhao (IHEP), Mingyi Dong, Qi Yan, Suen Hou, Tao Lin, Xiaolong Wang, Xin Shi, Xinchou Lou, Xiyuan Zhang, YAN Xiongbo, Yunpeng Lu, Yunyun Fan, Zhang Ying, Jingzhou Zhao, Xiaohui Qian

### Language polish tool

sJianchun: This is a private tool inside IHEP computing center

Jianchun: The large-scale application still requires caution.

### Magnet:

Xinchou: you need to remind the review team that this is something the very unique, very important in the tdr document.

Jianchun: For this part, I think also the idrc has had the question, all the comment and questions that expecting the magnet part be reaching the EDR level. So consider for your part, maybe you have more material and all those material be more mature compared to other subsystem.

Gang: material budget concern, related to physics (muon performance)

Feipeng: not included yet

Jianchun: CPECSW modeling is added, but material budget is not included

### Vertex:

Jingyu: The material budget of each layer needs to be updated  
background hit maps

Jianchun: One is that not every particle goes, there could produce a signal, mainly because if energy is too low, you can dump all the energy without producing a signal that's over threshold. So you definitely need to provide a certain momentum distributor or energy distribution for the detector fox to assimilate whether this will produce noise, heat, or not.

Zhijun/Haoyu: considered.

Weidong: Yifang already mentioned the detector alignment for silicon detector will be very challenging. My question is, are there any mechanical survey conducted during detector installation.

Zhijun/Joao: can have different level of alignment, monitor the change by self

Joao: you need to just not to say we're going to use tracks, but to explain how you're going to do it

### Silicon:

Jianchun: progress of AC-LAGD for inner tracker

it's a proper to add one paragraph in the section that you describe the outer TRACKER construction,

mingshui: March or only next month, so we will probably just to try to look at the performance on the physical object and not in terms of physics benchmark. We will assume the only in the timing information is added and the space resolution not changed.

Jianchun: for the outer TRACKER since we have only one there, what if we lose a certain area? And what will be the impact of this? This was raised by IDRC I believe. And this also need to have at least an answer to indicate how bad it

Jianchun: So let's just put it in a neutral way and just saying if we lose 5% of the area randomly somewhere and where it affect the physics performance just pick one benchmark a physics channel and to show what is the impact.

Joao: outer TRACKER, are these lot there's overlapping at all or not.

Jianchun: so maybe you guys should also include one plot that have the section just perpendicular to the Z so that you can see the overlapping of the outer TRACKER

**Next week:**

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