Minutes: CEPC Reference Detector TDR Meeting in Aug 20, 2024

CEPC Reference Detector TDR Meeting (Aug 20, 2024)

- 09:00 - 12:00 (Beijing Time)

Meeting agenda and minutes

- indico page: https://indico.ihep.ac.cn/event/23271/
- Participants
  - Present in the meeting room (M.B. 122)
    - Yifang Wang, Jianchun Wang, Zhijun Liang, Zhaoru Zhang, Weidong Li, Feipeng Ning, Mingyi Dong, Yunyun Fan, Qi Yan, Yiming Li, Huirong Qi, Wei Wei, Guang Zhao, Miao He, Yong Liu, Zheng Wang, Mingshui Chen, Gang Li, Linghui Wu, Shanzhen Chen
  - Online at ZOOM
    - Huirong Qi, Fangyi Guo, Fei Li, Feipeng Ning, Haijun Yang, Hengne Li, Jinfei Wu, Jingzhou Zhao, Jinyu Fu, Joao Barreiro Guimaraes Da Costa, Jun Guo, Qi Yan, Suen Hou, Tao LIN, Xiaolong Wang. Xiaolu Ji, Xin Shi, Ling Zhao

Overview: Jianchun

- Start writing chapters by overleaf.
- Carefully check Daniela's comments and reply and implement accordingly

Mechanics: Quan Ji

- layout of undergrand hall
- Preparation of Mechanics workhop in Luoyang

MDI: Haoyu Shi

- **Yifang: 30MW is baseline, set 30MW for the ones can be upgraded later，otherwise directly design for 50MW**

Vertex: Zhijun

- Yifang:
  - We should use the same standard in our design. So try to use as much as possible advanced technologies in the baseline and use the conservative one in the backup.
  - Need careful evaluation for different technologies before making decision, preparing proper answers to reviewer's questions.
- Yifang: suggest that the dead area of stitch in the layers should not align the same place. should rotate a little bit
- Jianchun: start to write TDR document

Silicon: Qi Yan

- Yifang: revisit and summarize your choices, including performance levels, reasons for technology selection, and cost comparisons. Ensure that simulation data are adequate. Explain the choice of using 3 or 4 layers, and the technology choice for endcaps. Show results in next week or the week after that.
- Yifang: clarify responsibility of mechanic responsible person of silicon detector

TPC: Huirong Qi

- Yifang: Wei Wei summarize request for amount of cabinets from sub-detectors
- **Jianchun: submit abstract for CEPC Hangzhou workshop asap.**

ECAL and HCAL: Yong Liu

- Yifang:
  - ECAL and HCAL should report separately at Tuesday meeting.
  - Jianbei and Sen should organize HCAL weekly meeting separated with ECAL.
  - **Make sure chapter leaders should be able to attend IDRC meeting in person on Oct 21-23.**
  - Clarify why BMR cannot be less than 3%. Current result cannot justify the advantage of BGO which is more expensive. THe results from simulation and test beam should match with each other.

Muon: Xiaolong Wang

- Yifang: not suggest to consider low resistance glass which is too expensive.
- Yifang: the position of 2 chimney for magnet need to be further studied. Show analysis result and dicision will be made on Tuesday meeting.
- **Jianchun: all sub-detectors should send Jianchun team statistics: number of staff, engineer, postdoc, student**

Magnet: Feipeng Ning

- Daniela's question about why cooperation institutes for magnet are all domestic, with no international institutes.
  - Yifang: only explain technical reasons： reduce transportation costs； sufficient experience to produce; low cable prices.

Electronics: Wei Wei

- Yifang: careful about logic of answering questions: firstly list different available technologies
- Yifang: mechanics is not urgent to join in DRD1 collaboration

TDAQ: Fei Li

Software: Weidong Li

- Status:

    - based on Daniela's comments, will study long-lived particle simulation
    - tasks to be done before software release in Sep.
        - Muon software, improving calorimeter endcap
- Discussion:
    - Jianchun: start TDR writing, overall framework in software chapter, details in sub-detectors
    - Yifang:
        - estimation of computing resources: Weidong coordinate with each group, prepare tables, and compile the data from subsystems.
        - Update summary table of software status

Performance: Shanzhen Chen

- Jianchun: concentrate manpower to study impact of current detector performance on physics performance.

Cost estimate: Miao He

- Yifang: start estimation since cost is associated with detector design