Introductory remarks

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中國科學院高能物理研究所
Institute of High Energy Physics
Chinese Academy of Sciences

News

- New weekly meeting time:
  - Wednesday, 3 pm Beijing time
- Repository for text (GIT) → See Li Gang's talk
- **Timescale for CDR:**
  - Draft text from each subgroup: September 30
    - Shared with others via GIT repository
  - First draft for internal review
    - November 1 (available for CEPC international workshop)
- **Next steps for each detector subgroups:**
  - Need outline structure from each subgroup
  - Need specific names of editors, in addition to conveners
  - Review detector geometry as defined by simulation group

Agenda

Wednesday, 30 August 2017

15:00 - 15:10	Introduction *10'* Speaker: Joao Guimaraes Costa
15:10 - 15:20	CDR Text and Git repository *10'* Speaker: LI Gang (EPC.IHEP)
15:20 - 15:30	Simulation *10'* Speakers: Mr. Manqi Ruan (IHEP), Dr. Gang LI (Experimental Physics Division, Institute of High Energy Physics) Material: Slides
15:30 - 15:50	Status of dual readout calorimeter work and simulation *20'* Speaker: Roberto Ferrari (INFN)
15:50 - 16:10	Status of drift chamber work and simulation *20'* Speaker: Francesco Grancagnolo (INFN-Lecce)
16:10 - 16:30	Status of general simulation integration for IDEA *20'* Speaker: Giovanni Tassielli
16:30 - 16:40	Calo *10'* Speakers: Haijun Yang (Shanghai Jiao Tong University), Prof. Tao HU (IHEP), Dr. Jianbei Liu (University of Science and Technology of China)
16:40 - 16:50	Vertex *10'* Speakers: Prof. Qun OUYANG (IHEP), Mr. Xiangming Sun (CCNU), Prof. Meng Wang (Shandong University)
16:50 - 17:00	Tracker *10'* Speaker: Dr. Huirong Qi (Institute of High Energy Physics, CAS)

Next week:

- MDI, magnet and Muon reports
- Discussion of detector requirements

Detector and Physics: Conceptual Design Report

Still about one year of work

Preliminary

- May ~~1~~ 3, 2017: Monday, P&D meeting
  - Decide on editors and timescale *today!*
  - ✔ Establish SVN/git repository area
- September 30: Text for all subsections finalized
  - Includes R&D results available until this date
  - All text committed to repository
- October 31: Version for internal review finalized
  - Harmonization of text across chapters
  - Finalize introduction and other common aspects (references, authors, etc)
- December 20: Version for external review ready
- March 1, 2018: Release to public

From April Meeting

Extra Slides

Possible CDR outline

Preliminary

1. CEPC Physics Potential
   1. Higgs physics
   2. Electroweak precision physics
   3. Searches for physics beyond the Standard Model
   4. Flavor physics

   } Theory group
2. Experimental conditions and detector requirements
   1. The CEPC experimental environment
      1. Beam backgrounds, polarization, etc
   2. Detector requirements for e+e- physics
      1. Track momentum and jet energy resolution, flavor tagging, particle identification
   3. Basic description of Detector Concepts
      - TPC tracking system (baseline)
      - All-silicon tracking
      - Drift chamber and DR calorimeter
3. Vertex detectors
4. Tracking system
   1. Detailed tracker concepts
      1. The TPC tracking system
      2. The All-Silicon tracking system
      3. The Drift Chamber tracking system
   2. Beam induced backgrounds in tracking system
   3. Performance

Possible CDR outline

Preliminary

5. Calorimetry
    1. Particle flow calorimeter
        1. Hadronic calorimeter
        2. Electromagnetic calorimeter
    2. Dual readout calorimeter
    3. Calorimeter performance
6. Detector magnet system
7. Muon system
    1. Conceptual design of muon system
    2. Muon reconstruction algorithm and system performance
8. Readout electronics and data acquisition (?)
9. CEPC interaction region and detector integration (MDI)
10. Physics performance
    1. Simulation and reconstruction
    2. Luminosity measurement
    3. Energy measurement
    4. Performance of low-level physics observables
    5. Detector benchmark processes
11. Future plans and R&D prospects

Work towards CDR

- Need to integrate work done in **Detector subgroups** with work done by **Simulation subgroup**
- Decide and review final options for detector to be simulated:
  - This will be our baseline detector!
    - Deviations from "Full Simulation" should be clearly explained in the CDR
    - Need to agree upon details now, before moving with large scale CDR work
- **Suggestions**:
  - Discuss within detector groups to decide what designs should be put forward as baseline
  - Common meetings between each detector subgroup and simulation subgroup to clarify details
  - Decisions need to be documented in **short notes** made available for review by CEPC colleagues (these can then turn into parts of the CDR)
  - Detector subgroups should provide manpower to aid on any needed improvements on digitization and geometry
  - Integrate international partners in discussions. We are planning **one** CDR with an integrated structure

CLIC: Example of Vertex Section

CLIC: Example of Calorimeter Section

Agenda

Wednesday, 3 May 2017

15:00 - 15:20	**Introduction** *20'* Speaker: Joao Guimaraes Costa
15:20 - 15:40	**MDI** *20'* Speaker: Dr. Hongbo ZHU (IHEP)
15:40 - 16:00	**Vertex** *20'* Speakers: Prof. Qun OUYANG (IHEP), Mr. Xiangming Sun (CCNU), Prof. Meng Wang (Shandong University)
16:00 - 16:20	**Tracker** *20'* Speaker: Dr. Huirong Qi (Institute of High Energy Physics, CAS)
16:20 - 16:40	**Calo** *20'* Speakers: Haijun Yang (Shanghai Jiao Tong University), Prof. Tao HU (IHEP), Dr. Jianbei Liu (University of Science and Technology of China)
16:40 - 17:00	**Muon** *20'* Speaker: Prof. Liang Li (Shanghai Jiao Tong University)
17:00 - 17:20	**Magnet** *20'* Speakers: Mr. Zian ZHU (高能所), Dr. Feipeng NING (高能所)
17:20 - 17:40	**Simulation** *20'* Speakers: Mr. Manqi Ruan (IHEP), Dr. Gang LI (Experimental Physics Division, Institute of High Energy Physics)

Detector Pre-CDR Outline

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Detector Pre-CDR Outline

CLIC Detector CDR - an example

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