TDR Editing

Tuesday CEPC TDR Meeting
Sep 23, 2025

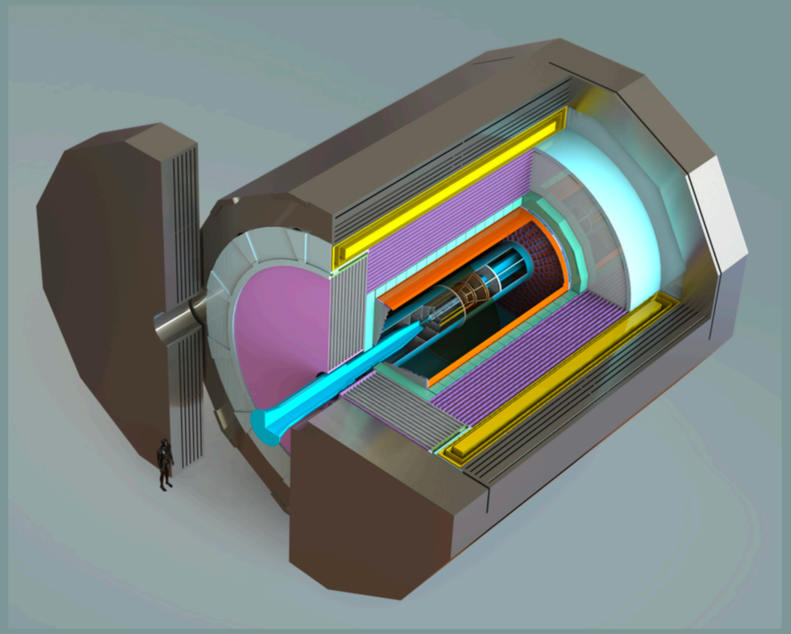
Joao Guimaraes

Draft v0.7.0

CEPC Reference Detector

Technical Design Report

Version: v0.7.0 build: 2025-09-23 01:52:50+08:00

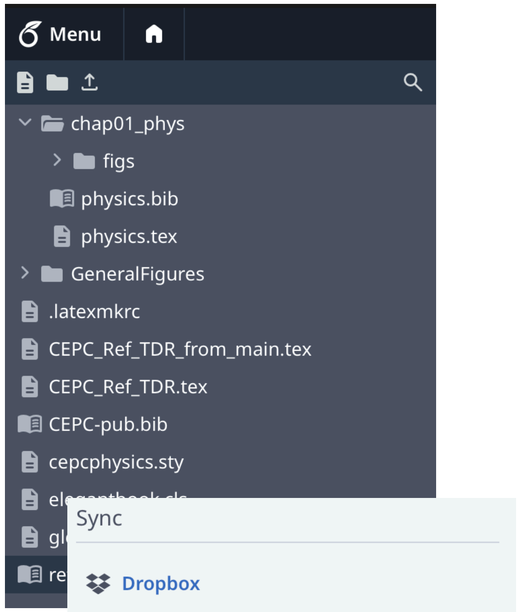


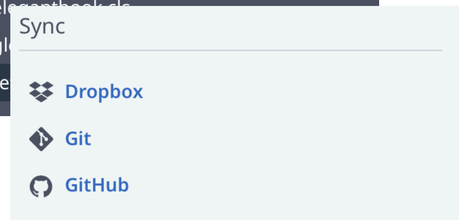
IDRC Review Status

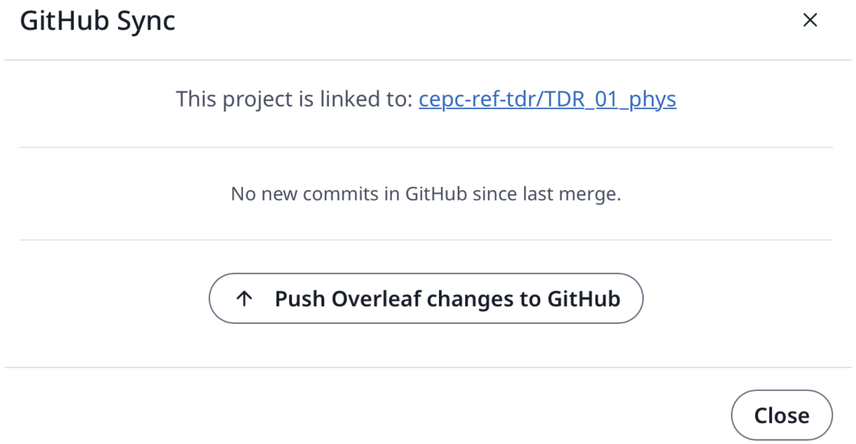
- **Third review meeting this Wednesday:**
  - https://indico.ihep.ac.cn/event/27191/#day-2025-09-24
  - Topics:
    - TDAQ
    - Solenoid
    - Muon Detector → update today
    - TPC
    - Cost estimation
  - All have rehearsed before
- **Committee feedback yesterday:**
  - Software
  - TPC
  - TDAQ (most textual)

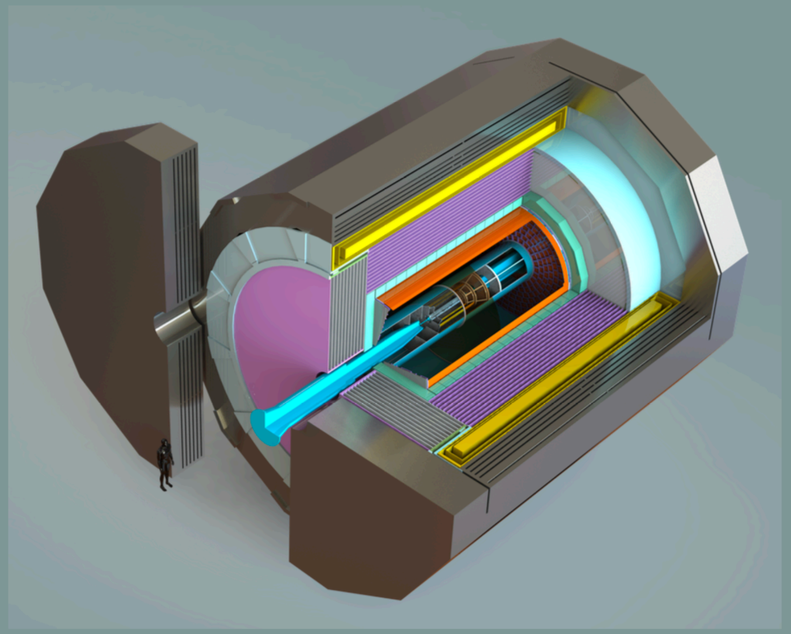
Status

- CEPC platform moved to a more robust overleaf platform
  - Linked to GIT, providing possibility of monitoring modifications, having backups and make mass modifications across the document
  - Please follow instructions provided by Zhaoru and Tao Lin?
    - Push and pull









Status

New parts preparing for Journal submission

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Acknowledgements

The completion of the CEPC Reference Detector Technical Design Report (TDR) owes its success to the diligent efforts of the CEPC detector research team, spearheaded by the Institute of High Energy Physics (IHEP) of the Chinese Academy of Sciences (CAS). Collaborations with both domestic and international institutes played pivotal roles by offering invaluable advice and support, contributing significantly to the TDR's creation.

We are thankful to the members of the international detector review committee:

Daniela Bortoletto, University of Oxford, UK
Jim Brau, University of Oregon, USA
Anna Colaleo, NFN-Bari, Italy
Paul Colas, CEA Paris-Saclay, France
Christophe De La Taille, OMEGA Laboratory, CNRS, France
Cristinel Diaconu, CPPM, France
Frank Gaede, DESY, Germany
Colin Gay, University of British Columbia, Canada
Liang Han, University of Science and Technology of China, China
Bob Kowalewski, University of Victoria, Canada
Gregor Kramberger, Jožef Stefan Institute, Slovenia
Roman Poeschl, IJCLab, France
Burkhard Schmidt, CERN, Switzerland
Tommaso Tabarelli de Fatis, INFN-Milano-Bicocca, Italy
Roberto Tenchini, INFN-Pisa, Italy
Maxim Titov, CEA Paris-Saclay, France
Ivan Vila Alvarez, University of Cantabria, Spain
Akira Yamamoto, KEK, Japan
Hitoshi Yamamoto, Tohoku University, Japan

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Conflict of interest

The authors declare that they have no conflict of interest.

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Preamble

This document is the second volume of the Circular Electron Positron Collider (CEPC) Technical Design Report. It presents a comprehensive overview of the CEPC Reference Detector technical design. The first volume [1], published in December 2023, describes the technical design of the CEPC accelerator complex and its associated civil engineering. This second volume is split into two parts. The first part, presents a brief summary of the physics case for the CEPC project, describes the technical details of the Reference Detector, and its technological options, highlights the expected detector and physics performance, and discusses future plans for detector development. The second part of this document, presents two other detector concepts, International Large Detector (ILD) and Innovative Detector for Electron-positron Accelerator (IDEA), that have been developed for future electron-positron colliders and put forward by the international community. They cover a similar physics program as the CEPC Reference Detector and could equip the CEPC second interaction point.

Preamble allows to identify the two parts of the document

Next Steps

- Goal: Submit TDR to archive on Saturday, October 11 (workday)
  - National Day Holiday: October 1 - 8
  - Most work needs to be completed by Tuesday, September 30 (one week from today)
- Most challenging:
  - Implement final feedback from IDRC committee
  - Collect and finalize authorship list
- Editorial Issues:
  - Make final modifications including responses to IDRC committee
  - Correct format for submission → need active help of all
  - Update acknowledgements, including IAC committee (to be moved to the end according to journal)
  - Collect all references at the end of the document (asked by journal)
  - Update chapters to remove work specific to IDEA and ILD (to be addressed)
- **Editors sign-off that their chapters reached Publication Quality by end of week**

Next Steps: Authorship List

- Authorship List:
  - IDEA:
    - 22 people (19 from Italy, 3 from elsewhere)
  - ILD
    - Imad to provide list
  - Email solicitation:
    - Accelerator TDR email list
    - CEPC General email list

Points to consider:

- Authorship at beginning of document
- List of editors?
- Abstract? (preamble can be adapted to become this)
- Check consistency of key chapters:
  - Executive Summary
  - Introduction chapter
  - Concept chapter
  - Future Plans chapter
- Reference Detector should be always capitalized (as a name) … Use macro: \refDet
- Capitalization of titles needs to consistent
  - Capitalize the first letter and keep the others small unless they are names (this minimizes the changes)

Format points:

- Check file with rules provided before
  - Sent by Zhaoru again recently
- Capitalization of titles consistent
  - Capitalize the first letter and keep the others small unless they are names
- Reference Detector should be always capitalized (as a name) … Use macro: \refDet
- Use definitions provided in **cepcphysics.sty**
  - Do not created alternative definitions without checking this file
- Number formats (e.g use 3×10^4 instead of 3E4)
- Check rules about units
- Check references carefully — many found to be referring to the wrong papers or not being reasonable to the topic

Reduce figures size

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Keeping track of modifications

- **Spreadsheet monitoring the status in IHEP docs:**
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  - 文件名：Status of TDR.xlsx
  - 文件路径：AnyShare://ZHANG Zhaoru(zhangzr)/CEPC Det TDR/Status of TDR.xlsx

- Will fill in input here, and **keep it updated** as we move along

- We will try to do the same!

- Provide feedback for improvements