

eeFACT 2025 - 70th ICFA Advanced Beam Dynamics Workshop on High Luminosity Circular e⁺e⁻ Colliders



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Overview of the CEPC MDI

Wednesday 5 March 2025 09:30 (30 minutes)

The machine-detector interface (MDI) issues are one of the most complicate and challenging topics at the Circular Electron Positron Collider (CEPC). Comprehensive understandings of the MDI issues are decisive for achieving the optimal overall performance of the accelerator and detector. The machine will operate at different beam energies, therefore, a flexible interaction region design will be plausible to allow for the large beam energy range. The design has to provide high luminosity that is desirable for physics studies, but keep the radiation backgrounds tolerable to the detectors. This requires careful balance of the requirements from the accelerator and detector sides.

In this talk, the latest design of the CEPC MDI based on CEPC Technical Design Report (TDR) will be presented, covering the design of the beam pipe and whole IR, the estimation of beam induced backgrounds, the mitigating schemes, and progress towards the TDR of CEPC reference detector.

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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