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Status of detector requirements for FCC-ee

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Circular colliders have the advantage of delivering collisions to multiple interaction points (up to 4 IPs for e⁺e⁻ collisions at the FCC-ee facility) that allow for different detector designs to be studied and optimized individually aiming at complementary physics target studies. On the one hand, the detectors must satisfy the constraints imposed by the invasive interaction region layout. On the other hand, the performance of heavy-flavour tagging, particle identification, tracking, and particle-flow reconstruction, and of lepton, jet, missing energy, and angular resolution, need to match the physics program and the exquisite statistical precision offered by FCC-ee. During the FCC feasibility study (2021-2025), benchmark physics processes will be used to determine, via appropriate simulations, the requirements on the detector performance or design that must be satisfied to ensure that the systematic uncertainties of the measurements are commensurate with their statistical precision (which is as low as 10^{-6} for the e⁺e⁻ running at the Z boson pole). Preliminary studies, which are a crucial input to further optimization of the two baseline concepts, IDEA and CLD, and to the development of new concepts, will be presented here.

In-person participation

Yes

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