

A detector for FCC-ee derived from the detector model for CLIC

The FCC-ee is a high-luminosity e^+e^- circular collider perceived as a potential first step of the Future Circular Collider program at CERN. FCC-ee would operate at centre-of-mass energies from 91 GeV (Z-boson) to 350 GeV (ttbar threshold). The FCC-ee physics program requires good particle identification and jet reconstruction performance which propagates to strict requirements on the detector design. A new detector model for FCC-ee, based on the conceptual design of the new detector model for CLIC, was developed to meet these conditions.

The detector includes low mass vertexing and silicon tracking systems with small cells, accurate hit-timing for all subsystems and highly granular calorimeters for precise particle-flow reconstruction. The proposed detector benefits from the knowledge gained during the studies for detectors at ILC and CLIC, as well as from the fully functional iLCSoft simulation and reconstruction framework using DD4hep.

This talk gives a brief overview of the FCC-ee project and describes the new detector model. Results of detailed detector performance studies based on full Monte Carlo simulations are presented.

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