Contribution ID: **8** Type: **Poster (one author must be in person)**

Performance of different FCC-ee vertex detector geometries and benefit of extended forward coverage

Thursday 2 June 2022 17:56 (1 minute)

A plethora of measurements at the FCC-ee crucially depend on efficient flavour tagging and precise flight distance measurements. To achieve this, the innermost piece of the FCC-ee detectors, the vertex detector, has to precisely locate the collision vertices, while adding only a minimal amount of material to the detector.

The proposed reduction of the beam pipe radius at the FCC-ee from 1.5 to 1 cm allows to move the first layer of the vertex detector closer to the interaction point, improving the impact parameter resolutions. In order not to get in the way of the beam pipe, the geometry of the vertex detector has to be adjusted however. This contribution presents the simulated performance of several vertex detector geometries in terms of impact parameter and vertex resolution and investigates the benefits of an extended forward coverage.

Primary author: ILG, Armin (University of Zurich)

Co-authors: CANELLI, Florencia (University of Zurich (CH)); GAUTAM, Kunal (Vrije Universiteit Brussel (BE)); PLOERER, Eduardo (University of Zurich (CH)); MACCHIOLO, Anna (University of Zurich (CH)); BLEKMAN, Freya (Deutsches Elektronen-Synchrotron (DE))

Presenter: ILG, Armin (University of Zurich)

Session Classification: Poster session

Track Classification: PE&D poster