

## Design of the IDEA vertex detector and its integration with FCC-ee,

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The FCC-ee aims at unprecedented luminosities, to be able to study the Standard Model of particle physics with extreme precision. The vertex detector, located close to the beam pipe, plays a paramount importance in the precise reconstruction of the trajectories of the charged tracks.

In this contribution we will present the design of the IDEA vertex detector, as a result aiming to fulfil the requirements coming from the physics as well as the constraints from the machine elements. The vertex detector, comprising three inner vertex barrel layers, two outer barrel and six discs, covers an angular acceptance of  $|\cos(\theta)| < 0.99$ , between 13.7 mm and 31.5 cm radius, and it is designed around a lightweight mechanical structure supporting MAPS Silicon detectors. The vertex detector is fully integrated with the machine elements thanks to a large lightweight cylindrical support structure, that also eases its integration.

We will present the detailed structural elements, discuss the status of the R&D and its performance.

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