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Status of the Tracker Design for FCChh

The $\sqrt{s}=100$ TeV proton-proton collider, FCC-hh, is a core part of the Future Circular Collider project. The conceptual design of a suitable detector for FCC-hh is an integral part of this ongoing effort.

Such a detector should be able to operate under luminosities of up to $3 \times 10^{35} \text{ cm}^{-2} \text{ s}^{-1}$, and pile-up conditions of up to ~ 1000 interactions per bunch crossing. In addition, the physics program includes signatures with highly boosted objects that create jets with very high track density and displaced secondary vertices far away from the interaction point. These conditions make particle tracking, vertex identification, and flavor tagging extremely challenging.

This contribution reviews the general ideas and requirements that drive the current tracker and vertex detector design for FCC-hh, like the detector granularity, material budget and pattern recognition. A special emphasis will be made on the reconstruction of boosted objects and the capability to identify heavy flavor jets.

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