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Status & Challenges of Tracker Design for FCC-hh

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A 100TeV proton collider is the central aspect of the Future Circular Collider (FCC) study. An integral part of the study is the conceptual design of individual detector systems that can exploit the luminosities reaching values of 2x10ˆ35 cmˆ-2 sˆ-1. One of the key limitations in detector design arises from an increased number of pile-up events O(1000), which makes tracking and identification of vertices extremely challenging. This talk will review the general ideas, which drive the current tracker design for the FCC-hh, like material budget, granularity in R-Φ & Z, pattern recognition & tagging capabilities, uniformity of magnetic field across large detection region, occupancy & data rates. We will also discuss the limits of current tracker technologies and requirements on their progress to meet conditions of the FCC-hh environment.

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