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CEPC Silicon Tracker Detector

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The CEPC Silicon Tracker, comprising the Inner Silicon Tracker (ITK) and Outer Silicon Tracker (OTK), will cover a total active area of approximately 100 m². It integrates advanced pixel sensors for the ITK and microstrip sensors for the OTK, with micron-level precision to achieve per-mille-level momentum resolution, measuring charged-particle trajectories from below 1 GeV/c to above 100 GeV/c. The detector will also serve as a high-precision Time-of-Flight system, targeting a single-layer timing resolution of 50 ps. By combining high-performance sensors, electronics, mechanics, and cooling, the design of the reference detector for the CEPC has been finalized, and the corresponding R&D work is ongoing. This presentation provides a comprehensive overview of the detector design, as well as the current status and future plans for system development.

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