

Full Simulation and Geometry Creating of CEPC Tracker

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The tracking system of the fourth conceptual detector at CEPC consists of a silicon pixel vertex detector, a silicon tracker of HV-CMOS and LGAD, and a time projection chamber (TPC).

The tracking system plays an important role in tracks reconstruction and PID.

It's necessary and urgent to validate the momentum resolution, physics performance of the tracking system and even PID capacity of Inner Tracker Endcap (ITKE), with a preliminary layout design by the full simulation tool implemented in CEPCSW.

The momentum resolution of different sub-tracker by incidence angle scanning has been done. The preliminary result of the recoiled Higgs was used to verify tracker's physics performance. Simple-designed double-layer silicon endcaps were implemented in CEPCSW to check the silicon's ability of PID.

And now, the staggered staves geometry of ITK Barrel (ITKB) has been created in CEPCSW by DD4hep to better serve the simulation.

The ITKE's geometry will be recreated after the new design completed as well.

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