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Preliminary design of CEPC survey & alignment

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China Electron Positron Collider (CEPC) is a huge particle collider aim to measure the precise properties of the Higgs boson, its collide energy will be 240 GEV. The CEPC was first proposed in 2012 and by June 2018 its conceptual design report is finished.
The CEPC mainly includes a 1.6km length Linac and LTB transport line, a 100km booster and a 100 km double-ring in which electron and positron beams will circulate in opposite directions in separate beam pipes and collide at two interaction points. The Linac will be built on the ground, the booster and the double-ring will be built in one tunnel underground.
This report will introduce the preliminary design of CEPC survey and alignment, includes precision requirement, alignment control network design, component fiducialization, tunnel installation alignment, interaction region alignment, component position monitor, workload estimate and main challenges.

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