

The 2024 Chengdu Symposium on Particle Physics and Cosmology: Phase Transitions, Dark Matter and Experimental Probes (CPCS 2024)

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The discovery of the Higgs boson marked the beginning of a new era in HEP. Precision measurement of the Higgs boson properties and exploring new physics beyond the Standard Model using Higgs as a tool become a natural next step beyond the LHC and HL-LHC. Among the proposed Higgs factories worldwide, the Circular Electron Positron Collider (CEPC) with 100km circumference was proposed by the Chinese HEP community in 2012. CEPC is an e^+e^- Higgs factory to produce Higgs/W/Z bosons and top quarks which aims to measure Higgs, EW, flavor physics and QCD with unprecedented precision and to probe new physics beyond the SM. With the official release of CEPC Accelerator Technical Design Report (TDR) in December, 2023, we are intensively preparing accelerator Engineering Design Report (EDR) and reference detector TDR. The purpose is to submit CEPC proposal to Chinese government for approval and start construction within the “15th five-year plan (2026-2030)”. In this talk, the overview and global aspects of the CEPC project, highlights of CEPC physics, accelerator and detector R&D will be presented.

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