

## **R&D activities of highly granular hadron calorimeters for the CEPC**

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Based on the particle-flow algorithm, highly granular sampling hadron calorimetry (HCAL) with scintillator tiles or micro-pattern gas detectors (MPGDs) as active layers and stainless steel as absorber is proposed to achieve an unprecedented jet energy resolution to address major challenges of precision measurements at future lepton colliders, including the Circular Electron Positron Collider (CEPC). A wide range of R&D activities are ongoing, including the construction of a HCAL prototype with 40 layers, the development of large-scale Resistive Plate Chambers (RPCs) and potentials of an excellent timing resolution on the order of 10 pico-second. This talk will present the latest progress of the prototype development, with highlights from optimization studies of the HCAL design based on the evolving Particle Flow Algorithm “Arbor”, characterisations of silicon photomultipliers (SiPMs) from different vendors, mass production of scintillator tiles, automated foil wrapping, as well as dedicated test stands for the quality control of scintillator tiles and SiPMs. Highlighted progress of RPC-based layers and dedicated electronics for fast timing will also be presented.

**Primary author:** 石, 禹坤 (中国科学技术大学)

**Co-authors:** YANG, Haijun (Shanghai Jiao Tong University); Dr LIU, Jianbei (University of Science and Technology of China); Dr LIU, Yong (Institute of High Energy Physics)

**Presenter:** 石, 禹坤 (中国科学技术大学)

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