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R&D on Noble Liquid Calorimeter for FCC-ee

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A novel concept for a high granular noble liquid calorimeter optimised for measurements of electrons and photons at e^+e^- Higgs factories, namely for the Future Circular Collider FCC-ee, will be introduced. The development of the noble liquid calorimeter is a part of Detector Research and Development Collaboration for Calorimeters (DRD6) forming a workpackage 2. The design of the electromagnetic calorimeter with straight multilayer readout electrodes allow for fine segmentation which is crucial for advanced reconstruction techniques, e.g. machine learning algorithms and particle flow. Ongoing R&D studies on the readout electrodes will be presented. The results of measurements with first prototypes will be compared with results of simulations. The optimization studies of the mechanical structure of the calorimeter, along with results of tests on the absorber prototype will be shown. Steps towards a beam test prototype will be discussed. The integration of a calorimeter system of an ALLEGRO detector concept in key4hep software will be presented, together with the expected performance.

Primary experiment

Detector Research and Development Collaboration

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