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## Design and performance of the calorimeter system for ALLEGRO FCC-ee detector concept

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Allegro, one of the detector concepts under study for FCC-ee, is currently in its design and optimization phase. This contribution aims to introduce Allegro's calorimeter system, offering an overview of the baseline technologies planned for its two calorimeter systems: a highly granular noble-liquid electromagnetic calorimeter and a hadronic calorimeter with scintillating-light readout using wavelength shifting fibers. To evaluate the performance of calorimeters, test different detector geometries, and fine-tune reconstruction algorithms such as topological clustering, Monte Carlo simulations of single particles are used. Preliminary results from performance studies with the standalone HCal and combined ECal+HCal calorimeters are presented, shedding light on the promising capabilities of this newly introduced detector concept for FCC-ee. In addition to these design-focused analyses, we briefly introduce our inquiries into the potential use of machine-learning approaches for particle identification and detector calibration.

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