

R&D studies of the noble liquid calorimeter for ALLEGRO FCC-ee detector concept

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The ALLEGRO is a detector concept optimized for precision measurements at the Future Circular Collider FCC-ee with a noble liquid calorimeter as an electromagnetic calorimeter. An extensive R&D program on the high granular noble liquid calorimeter suitable for advanced reconstruction techniques, e.g. machine learning and particle flow, has been launched. The fine segmentation of the calorimeter is realized by the usage of the straight multilayer electrodes. In this talk, we will introduce the ALLEGRO concept, discuss the design of the calorimeter, and show the expected performance. The results of the simulations and the measurements with the first prototypes of the multilayer electrodes will be compared. The optimization studies of the mechanical structure of the calorimeter and the cryostat, along with the results of the tests on the absorber prototype will be shown. The status of the preparation for the beam test prototype module will be presented.

Alternate track

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