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Electromagnetic calorimetry based on liquid argon for the FCC-hh experiments

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“Calorimetry with liquid argon as the active medium has been chosen as the baseline technology for large parts of the FCC-hh calorimeters. This includes the barrel electromagnetic (EM) calorimeter, the endcap EM and hadronic calorimeter and the forward calorimeter. These calorimeters have to meet the requirements of high radiation hardness and must be able to deal with a very high number of collisions per bunch crossings (pile-up). An excellent energy and angular resolution for a wide range of electrons' and photons' momentum is needed in order to meet the demands based on the physics benchmarks. The detector layout in the barrel region combines the concept of a highly granular calorimeter with precise energy measurements. It has been optimised since the last FCC Week and all recent results of the performance studies will be presented. Moreover, the study includes the influence of the noise in the detector, coming from the electronics and from the pile-up.

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