

Installation and commissioning of the Electromagnetic Calorimeter in the HADES experiment

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The Electromagnetic Calorimeter (ECAL) serves as a subdetector for the HADES (High Acceptance Di-Electron Spectrometer) experiment, located at the FAIR-GSI in Darmstadt, Germany. The HADES experiment aims to study the QCD phase diagram at high baryonic densities and low temperatures, primarily via the di-lepton decay of vector mesons. The primary function of the ECAL is to measure the energy of γ -quanta. The detector's implementation allows for the study of the production of neutral mesons, hyperons and improves electron-to-hadron separation in fixed-target nuclear reactions at 1-4 AGeV beam energies. The ECAL setup consists of six sectors, each with 163 modules, and utilizes Cherenkov light detection via lead-glass prisms and photomultiplier tubes (PMTs).

The presentation focuses on the status of the ECAL detector before forthcoming beam time in 2024. The key milestones will be described, including the successful installation and commissioning of the final setup with all six sectors, comprehensive maintenance of the entire detector, and precise gain settings of the PMTs using cosmic muon measurements. This gain settings procedure ensures the proper dynamic range settings and allows for preliminary energy calibration.

Collaboration

HADES

Role of Submitter

I am the presenter

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