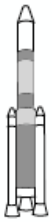

CALOR 2024

第２０回 素粒子・原子核物理学
カロリメータ検出器国際会議
（つくば国際会議場, 2024年5月20日～２４日）

Contribution ID: **16** Type: **Oral**

Setup and COSY Proton Beam Tests of the PANDA Forward Endcap Calorimeter at FAIR

Tuesday 21 May 2024 12:55 (20 minutes)

PANDA is the main hadron physics addressing experiment of the future FAIR (Facility for Antiproton and Ion Research) center at Darmstadt, Germany. Located at the HESR antiproton storage ring the PANDA detector is optimized for physics of the weak and strong interactions in the charm sector: Search for new and exotic states of matter, precise determination of quantum numbers, masses and widths of hadronic resonances and deeper insights in the structure of hadrons.
The detector consists of a target spectrometer built around the interaction region of antiprotons carrying momenta of 1.5-15 GeV/c with a fixed hydrogen target and a forward spectrometer. Its design is based on compactness and cost saving while enabling to achieve high resolution, rate capability and physics selectivity.
In the PANDA target spectrometer the electromagnetic calorimeter is composed of three subdetectors based on lead tungstate crystals operated at -25 degrees C. A barrel structure build from 11360 crystals will be closed in up- and downstream direction by two endcaps containing 524 and 3856 crystals, respectively.
The upstream located forward endcap has been completed with vacuum photo tetrode read-out crystal submodules and was operated at two beam times in 2023 at the Jülich Cooler Synchrotron COSY with a 2.5 GeV/c proton beam.
Besides the detector setup, the cooling concept, and beam test results will be presented.

Author: HELD, Thomas

Presenter: HELD, Thomas

Session Classification: EIC/RHIC/FAIR/ALICE