## Contribution submission to the conference Aachen 2019

Energy Calibration and First Results of the CERN 2018 Test Beams of the Large AHCAL Technological Prototype — •DANIEL HEUCHEL for the CALICE-D-Collaboration — Deutsches Elektronen-Synchrotron (DESY), Hamburg, Deutschland

The Analog Hadronic Calorimeter (AHCAL) is a highly granular calorimeter developed by the CALICE collaboration for a future  $e^+e^-$  linear collider. Driven by the Particle Flow approach the achievement of jet energy resolutions of 3-4% for jet energies between 40-500 GeV is desired. The detector concept is based on 3x3 cm<sup>2</sup> scintillating tiles combined with a read-out by Silicon Photomultipliers (SiPM). In total 21888 channels on 38 active layers, alternating with steel absorber plates, build up the latest generation of the AHCAL technological prototype. This prototype features fully integrated readout electronics, scalable to a full collider detector, operable in power pulsing mode to reduce power consumption. In 2018 three beam test periods at the CERN SPS have been performed with muon, electron and pion beams for the validation of the calibration of the detector and to study hadronic showers.

In this contribution, we will present first results of this beam test periods with the focus on the energy calibration of the detector with muon data and the comparison to simulation. Furthermore, comparative studies of calibration quantities will be discussed in terms of uniformity and stability during the different beam test periods and for different detector operation modes.

Part:	Т
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