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## Calibration and SiPM Saturation studies with the CALICE AHCAL

An Analog Hadronic Calorimeter (AHCAL) is a highly granular calorimeter developed and constructed by the members of CALICE collaboration for a future  $e^+e^-$  linear collider.

The prototype consists of a 38-layer sampling structure of steel absorber plates and highly segmented active layers consisting of 21,888 channels of  $30 \times 30 \times 3$  mm<sup>3</sup> scintillator tiles read out by Silicon Photomultipliers (SiPM). The prototype is equipped with a LED system capable of determining SiPM quantities. The LED signals are used to determine the gain of the SiPMs. With the gain measurements, the homogeneity of the detector is studied, the stability and temperature dependence during the testbeam periods are monitored. The amplitudes measured in physics events need to be corrected for the non-linear behavior of the SiPMs due to their limited number of pixels. This saturation effect is studied compared to the data. The energy calibration of the detector with muon data and comparison to simulation is also presented. The study is performed using data collected with the AHCAL at CERN SPS test beams 2018.

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