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Energy calibration of FHCal with cosmic muons at BM@N experiment

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The Forward Hadron Calorimeter is one of the sub-detectors of the BM@N experimental setup at JINR, Dubna. It consists of 54 lead-scintillator modules of two types with the transverse sizes 20x20 cm^2 and 15x15 cm^2. These two types of modules are subdivided into 10 and 7 individual longitudinal sections, respectively. Each section provides the independent light and amplitude signal readout with silicon photomultipliers (SiPMs). High signal to noise ratio of SiPM allows detection of cosmic rays with low energy depositions in FHCAL longitudinal sections. A method for cosmic muon track reconstruction is discussed. A procedure for energy calibration based on muon track length and energy deposition in each section is proposed. Experimental results of FHCAL cosmic calibration are presented.

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