

Calibration and performances of the electromagnetic calorimeter at MPD/NICA.

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The electromagnetic calorimeter (ECal) is an integral part of the MPD experiment and designed to measure the energy and coordinates of photons and electrons as a manifestations of the nuclear matter properties. ECAL has a segmented structure and consists of 2.400 modules, everyone has 16 cells (towers). Each tower is assembled from 210 layers, which is a set of alternating lead and scintillation plates pierced with wavelength shifting fibers to transport light to photodetectors [1]. Mass production of calorimetric modules was launched last year. At the present time, more than 300 modules of various types have been produced. The calorimeter modules are tested and calibrated in two directions: on the stand at JINR using cosmic rays and on the electron beam of S-25R «Pakhra» of the Lebedev Physics Institute [2]. This report presents the methods and results of calibration and testing of the selected ECal modules. The simulation programs for beam and cosmic tests were developed [3]. Last experimental results in comparison with simulated data are presented and discussed. This work was supported by RFBR grant no. 18-02-40079.

Keyword: Multi-Purpose Detector, electromagnetic calorimeter (ECal), «Pakhra» synchrotron, calibration, cosmic rays, nuclear matter properties

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