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# MPD electromagnetic calorimeter simulation

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In a frame of the NICA / MPD project, a unique cylindrical electromagnetic calorimeter (ECal) is being created. Recently, the design of the power frame made of carbon fiber was completed. This led to significant changes of the calorimeter structure. This report gives a brief description of the new ECal geometry, the modification of simulation procedure and the current basic parameters of the calorimeter. The ECal geometry simulation is based on the standard software of

the MPD detector: MpdRoot and FairSoft. In the new version, the calorimeter consists of 38,400 “shashlik” towers with 210 layers combined from a 1.5 mm scintillator plate and 0.3 mm lead plate coated with reflective paint. The shapes of the towers are approximately a truncated pyramid with a base of  $4\sqrt{4}$  cm<sup>2</sup> and of 64 types, more accurately described by a set of trapezoids. All towers look at the point of the beam intersection, forming the so-called projective geometry. Each calorimeter module is formed of 16 towers. All modules are placed in 50 baskets with a total weight equal to 1.2 tons each. As part of this program, independent module options have been developed to use in the test measurements on cosmic ray and electron beams. This work was supported by RFBR grants № 18-02-40054 and № 18-02-40079.

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