

The construction and parameters of Forward Hadron Calorimeter at MPD/NICA.

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Forward hadron calorimeter (FHCAL) is intended for the measurements of the geometry of heavy ions collisions. The main purpose of the FHCAL is to provide an experimental measurement of a heavy-ion collision centrality and orientation of its reaction plane. FHCAL consists of two identical arms placed at the left/right sides from the beam collision point. This is a modular lead-scintillator compensating calorimeter designed to measure the transverse energy distribution of the projectile nuclei fragments (spectators) and forward going particles produced close to the beam rapidity. The FHCAL has a large central beam hole. Therefore, in the peripheral collisions the most of heavy fragment escape into this beam hole. Nevertheless, the detection of the transverse energy distribution in inner and outer parts of the calorimeter allows the reconstruction of the collision centrality. The longitudinal segmentation of FHCAL modules into 7 sections makes possible to identify the particle types (electrons, hadrons and muons) depending on the longitudinal profile of the energy losses in the modules. This identification ability is used for the quality check and the calibration of the FHCAL modules with minimum ionizing particles. The construction of the FHCAL modules, the methods of the energy calibration with cosmic muons and the parameters of the modules are discussed.

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