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## Highly Granular Time-of-Flight Neutron Detector HGND for the BM@N experiment

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A new Highly Granular Neutron Detector (HGND) is being developed and constructed in order to identify neutrons and to measure their energies from nucleus-nucleus collisions at the BM@N experiment (JINR). The HGND consists of alternating layers of copper absorber plates and matrices of scintillation cells with individual light readout by silicon photomultipliers. The HGND will be used in the fixed target BM@N experiment in heavy-ion collisions with energies up to 4 GeV per nucleon. The ratios of direct and elliptic azimuthal neutron flow to the corresponding proton flow, which can be measured with the magnetic spectrometer of the BM@N facility, should be sensitive, as shown in a number of models, to the symmetry energy in the equation of state (EoS) of high dense nuclear matter. The performance studies based on the results of simulations of the new HGND detector at the BM@N experiment will be presented. The current status of the HGND construction will be discussed.

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