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Machine Learning-based Neutron Reconstruction in the HGND at the BM@N experiment

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The Highly Granular Neutron Detector (HGND) is designed for the BM@N experiment to study neutron emission in heavy ion collisions at beam energies up to 4A GeV. This detector allows the identification of neutrons and the reconstruction of their energies using time-of-flight method, facilitating the assessment of neutron yields and azimuthal flow. The challenging neutron energy range of 0.5 – 4 GeV and large background contributions require sophisticated reconstruction algorithms. In this contribution, we present a machine learning-based approach to the neutron reconstruction problem and discuss preliminary results of the proposed algorithm.

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