Contribution ID: 311

Type: Oral

## Graph Neural Network-based neutron reconstruction in the HGND at the BM@N experiment

Tuesday 1 July 2025 18:20 (20 minutes)

The Highly Granular Neutron Detector (HGND) is designed for the BM@N experiment, aimed at investigating neutron emission in heavy ion collisions at beam energies of up to 4A GeV. The HGND allows the identification of neutrons and the reconstruction of their energies using time-of-flight method, which is crucial for analyzing neutron yields and azimuthal flow. Given the challenging energy range of 0.5 - 4 GeV and the significant background contributions in the BM@N environment, the development of advanced reconstruction algorithms is essential. In this contribution, we present a graph neural network approach to the neutron reconstruction problem and discuss the preliminary results of the proposed algorithm.

Primary author: BOCHARNIKOV, Vladimir (HSE University)

Presenter: BOCHARNIKOV, Vladimir (HSE University)

Session Classification: 4. Relativistic nuclear physics, high-energy and elementary particle physics

**Track Classification:** Section 4. Relativistic nuclear physics, high-energy and elementary particle physics.