Contribution ID : **214**   Type : **Oral talk**

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

Friday, 25 October 2024 11:30 (15)

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.

Primary author(s) : BOCHARNIKOV, Vladimir (HSE University); GOLUBEVA, Marina (Institute for Nuclear Research RAS); GUBER, Fedor (INR); KARPUSHKIN, Nikolay (INR RAS); MOROZOV, Sergey (INR/MEPhI); PARFENOV, Peter (JINR, NRNU MEPhI); RATNIKOV, Fedor (NRU Higher School of Economics); SHABANOV, Arseniy; ZUBANKOV, Aleksandr (Institute for Nuclear Research of the Russian Academy of Sciences)

Presenter(s) : BOCHARNIKOV, Vladimir (HSE University)

Session Classification : HEP Experiment

Track Classification : High energy physics: experiment