

Measurement of forward neutron yields with a High Granular Neutron Time-of-Flight Detector prototype from electromagnetic dissociation and nuclear interaction in Xe+CsI@3.8 AGeV collisions at the BM@N experiment.

The High Granular Neutron Time-of-Flight Detector (HGND) prototype was used for the first time in Xe+CsI@3.8 AGeV run at the BM@N experiment. The multilayer longitudinal structure (absorber/scintillator), high granularity and good time resolution of the HGND prototype makes it possible to identify and measure the energies of neutrons produced in nucleus-nucleus collisions by time-of-flight. A comparison of forward neutron yields on the HGND prototype from electromagnetic dissociation in ultraperipheral collisions and from nuclear interaction in central collisions is presented. The fraction of background events outside the target is estimated. Taking into account the acceptance and efficiency of neutron detection by the HGND prototype, the ratio of neutron yields from a nuclear reaction to EMD is in a good agreement within the errors with simulations.

Section

Heavy ion collisions at Intermediate and high energies

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