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Development of a TOF neutron spectrometer in the BM@N experiment

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The report is dedicated to the development of a compact time-of-flight neutron spectrometer emitted at large angles in the nucleus-target fragmentation region. Neutron detection was performed using stilbene crystals coupled with an assembly of four SensL SiPMs, allowing measurements to be conducted in a strong magnetic field of 0.9 T. The use of the n/g-pulse shape discrimination method is an important feature of the spectrometer, enabling the discrimination of gamma-ray background and the identification of neutron events. The concept of the spectrometer, construction of neutron detectors and data processing methodology are discussed. The report will cover the current status of processing neutron data obtained in Xe+CsI collisions.

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