

XXV International Baldin Seminar on High Energy Physics Problems
"Relativistic Nuclear Physics and Quantum Chromodynamics"



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Detailed Simulation of Inner Tracker for the first physics run in the BM@N experiment

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The lastest run of the BM@N experiment conducted at the beginning of 2023 is officially a physics run, the main purpose of which is to obtain certain scientific results declared in the research program of the experiment.

Due to the increased event multiplicity, in comparison with previous experimental runs, the configuration of the inner tracker was appreciably upgraded: detection planes were added, the quality of the algorithms for simulation and reconstruction of physics events was improved.

The report presents the features of a detailed simulation of the FSD and GEM microstrip coordinate detectors comprised the inner tracking system of the BM@N experiment within the configuration of the latest eighth run. The development of the detailed ROOT geometry necessary for the simulation of the charged particle passage based on Monte Carlo methods using the Geant4 transport system, as well as features of cluster formation on microstrip readout, are also considered.

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