

Performance for spectator symmetry plane estimation with the BM@N experiment

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The Baryonic Matter at Nuclotron experiment (BM@N) aims to study the area of QCD phase diagram at high net baryon densities and moderate temperatures with collisions of heavy ions at $\sqrt{s_{NN}} = 2.3\text{--}3.5$ GeV. Anisotropic transverse flow is one of the most important observable phenomena in a study of the properties of matter created in such collisions. Flow measurements require the knowledge of collision symmetry plane, which can be determined from deflection of collision spectators in the plane transverse to the direction of the moving ions.

BM@N performance for projectile spectator symmetry plane estimation is studied with Monte Carlo simulations using Xe+Cs collisions with beam energies of 4A GeV generated with the DCM-QGSM-SMM model. Investigated different data-driven methods to extract correction factor in flow analysis for the resolution of spectator symmetry plane estimated with the BM@N Forward Hadron Calorimeter.

Primary authors: MAMAEV, Mikhail (NRNU MEPhI); FOR THE BM@N COLLABORATION

Presenter: MAMAEV, Mikhail (NRNU MEPhI)

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