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The first results for directed flow of protons in Xe+Cs collisions at Ekin=3.8A GeV in the BM@N experiment

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Heavy ion collision at the energies of several A GeV is the only way to produce in laboratory hot and dense matter existing in massive astrophysical objects such as neutron stars, binary stellar collisions etc. In 2023 Baryonic Matter at Nuclotron (BM@N) experiment collected the first physical data for Xe+CsI collisions at $E_{kin} = 3.8A$ GeV. Studying the observables from heavy ion collisions can shed light on the properties of the matter created and establish its Equation of State (EOS). Collective motion of the produced in the collision particles is one of such observables sensitive to the EOS of the produced matter. We present the first results for directed flow of protons with respect to the spectator symmetry plane and compare the obtained results with existing word data.

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