

Collective flow measurements with HADES in Au+Au collisions at 1.23A GeV

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HADES provides a large acceptance combined with a high mass-resolution and therefore allows to study di-electron and hadron production in heavy-ion collisions with unprecedented precision. With the high statistics of seven billion Au-Au collisions at 1.23A GeV recorded in 2012 the investigation of high-order flow harmonics is possible. Multi-particle azimuthal correlation techniques can be utilized to disentangle the contribution from collective and non-flow process involved in the dynamical evolution of heavy-ion reactions. At low energies v_1 and v_2 , related to directed and elliptic flow, have been measured for pions, charged kaons, protons, neutrons and fragments at the BEVALAC and SIS18, but so far high-order harmonics have not been studied. They allow to characterize the properties of the dense hadronic medium produced in these collisions, such as its viscosity, and provide thus an important reference to measurements at higher energies.

Preferred Track

Baryon-Rich QCD Matter and Astrophysics

Collaboration

Other

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