

PHENIX results on charged-hadron azimuthal anisotropies in Au+Au collisions at center-of-mass energies from 39 to 200 GeV

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Measurements of the azimuthal anisotropy coefficients (v_n) of particle emission are an established method to characterize the quark gluon plasma (QGP) generated in the high-energy heavy-ions collisions. An important early finding at RHIC was that hydrodynamic calculations can account for the measured anisotropy at low p_T and relate them to the collision geometry. At higher p_T , where hard processes are dominant, energy loss of partons traversing the QGP also creates an azimuthal anisotropy in the final-state hadrons which is related to the collision geometry. In order to better understand the interplay between the soft and hard processes, PHENIX measured the charged-hadron v_n coefficients over a wide p_T range (up to 10 GeV/c) as a function of centrality and beam energy.

In this talk, we will present new v_2 measurements for charged hadrons in 200 GeV Au+Au collisions as a function of p_T and centrality and compare them to those from π^0 mesons. We will also report the v_2 , v_3 , and v_4 results for charged hadrons as function of the beam energy from 39 to 200 GeV.

Preferred Track

Collective Dynamics

Collaboration

PHENIX

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