

Title

Charge-Asymmetry Dependence of Proton Elliptic Flow in 200 GeV Au+Au Collisions
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Abstract

The chiral magnetic wave (CMW) is predicted to manifest a finite electric quadrupole moment in the quark-gluon plasma produced in high-energy heavy-ion collisions [1]. This quadrupole moment generates a divergence in the azimuthal anisotropy (v_2) of positively and negatively charged particles such that $v_2(+)$ < $v_2(-)$. This effect is proportional to the apparent charge asymmetry (A_{ch}) of particles in the same rapidity window. The A_{ch} dependence of v_2 has already been observed in the cases of charged pions and kaons [2, 3]. We present preliminary STAR measurements of v_2 for protons and anti-protons as a function of A_{ch} from $\sqrt{s_{NN}} = 200$ GeV Au+Au collisions for different centrality classes. The results are then compared with the previously reported results of pions and kaons.

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- [3] Q.-Y Shou, Nucl. Phys. A **931** (2014) 758.