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PHENIX Measurements of Azimuthal Anisotropy of Light and Heavy Flavor Hadrons in Au+Au Collisions at Forward Rapidity

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One of the most prominent features of the quark gluon plasma is its near-perfect fluid behavior. An important outstanding question is establishing the degree to which heavy flavor particles flow with the bulk system. Measurements of the Fourier coefficient v2 of light and heavy flavor hadrons can provide insight into the properties of the medium. At low transverse momentum (pT) the mass dependence of v2 is associated
with the common flow velocity in the bulk system, whereas at higher pT path length and mass dependencies in the energy loss play a role. We will present new results measured with the PHENIX muon arms covering 1.2<|η|<2.2 using high statistics Au+Au dataset collected in 2014. The v2 of light hadrons and muons from heavy flavor decays are measured in the range 0.5<pT<5 GeV/c and the results are compared to measurements at mid-rapidity. Forward rapidity samples different initial and final state effects than mid-rapidity, and therefore the produced particles may be subject to different pressure gradients. The measurements will be compared to theoretical calculations.

Category

Experiment

Collaboration (if applicable)

PHENIX Experiment

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