

QM23 Poster Abstract

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1 **Measurements of jet v_2 in medium-sized systems** 2 **at STAR**

3 Hard partonic scatterings, occurring at the early stages of heavy-ion collisions,
4 produce jets, which experience the full evolution of the quark-gluon plasma
5 (QGP). As they traverse through the QGP, jets lose energy through collisional
6 and radiative processes, collectively known as the jet quenching. In semi-central
7 heavy-ion events, the QGP takes an approximately elliptical shape in the trans-
8 verse plane whose mean in-plane and out-of-plane distances differ. This fact can
9 be used to vary the average path length for jets traversing the QGP, and those
10 traveling in-plane should experience less quenching effects than those traveling
11 out-of-plane. This differential quenching manifests as a suppression of jet yield
12 out-of-plane relative to in-plane, quantified by jet v_2 , the second order Fourier
13 coefficient. In this poster, jet v_2 will be presented from Ru+Ru, Zr+Zr, and
14 O+O collisions at $\sqrt{s_{NN}} = 200$ GeV with multiple jet resolution parameters.
15 Studying jet v_2 in collision systems of varying sizes may help disentangle path-
16 length dependent quenching effects and other effects which could give rise to
17 anisotropies in systems even smaller than O+O collisions.