Abstract Submitted
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Azimuthal anisotropy: transition from hydrodynamic flow to jet suppression[1] ROY LACEY, Stony Brook University — The 2^{nd} and 4^{th} azimuthal anisotropy coefficients $v_{2,4}(N_{\text{part}}, p_T)$ are scaled with the initial eccentricity $\varepsilon_{2,4}(N_{\text{part}})$ of the collision zone and studied as a function of the number of participants N_{part} and the transverse momenta p_T. Scaling violations are observed for $p_T \lesssim 3$ GeV/c, consistent with a quadratic increase of viscous corrections with p_T. The predicted viscous corrections to flow and the thermal distribution function at freeze-out constrain estimates of the specific viscosity $(4\pi\frac{\eta}{s})$ to 1.1 ± 0.1 or 2.1 ± 0.2 and the freeze-out temperature (T_f) to 162 ± 11 MeV or 173 ± 11 MeV for two different models for the initial collision geometry. For $p_T \gtrsim 3$ GeV/c, the apparent viscous corrections exhibit a rapid decrease with p_T, suggesting a breakdown of the hydrodynamic ansatz and the onset of a change from flow-driven to suppression-driven anisotropy.

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