System Size and Shape Dependence of the Viscous Damping of Anisotropic Flow

NISEEM ABDELRAHMAN, Stony Brook university — We present recent STAR measurements of the anisotropic flow coefficients $v_n$ ($n = 1 - 6$) in Au+Au, Cu+Cu, Cu+Au collisions at $\sqrt{s_{NN}} = 200$ GeV and U+U collisions at $\sqrt{s_{NN}} = 193$ GeV. For a given system, the differential $v_n$ measurements indicate acoustic scaling patterns which reflect the detailed dependence of $v_n$ on collision-system size and eccentricity ($\varepsilon_n$). These measurements constrain the viscous coefficient which encodes the specific shear viscosity $\eta/s$. Our measurements show that all the collision-systems give the same viscous coefficient after scaling-out the collision-system size and eccentricity.

1For the STAR Collaboration