Abstract Submitted
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Beam energy dependence of the viscous damping of anisotropic flow[1] ROY LACEY, Chem. Dept., Stony Brook University — The flow harmonics $v_{2,3}$ for charged hadrons, are studied for a broad range of centrality selections and beam collision energies in Au+Au ($\sqrt{s_{NN}} = 7.7 - 200$ GeV) and Pb+Pb ($\sqrt{s_{NN}} = 2.76$ TeV) collisions. They validate the characteristic signature expected for the system size dependence of viscous damping at each collision energy studied. The extracted viscous coefficients, that encode the magnitude of the ratio of shear viscosity to entropy density η/s, are observed to decrease to an apparent minimum as the collision energy is increased from $\sqrt{s_{NN}} = 7.7$ to approximately 62.4 GeV; thereafter, they show a slow increase with $\sqrt{s_{NN}}$ up to 2.76 TeV. This pattern of viscous damping provides the first experimental constraint for η/s in the temperature-baryon chemical potential (T, μ_B) plane, and could be an initial indication for decay trajectories which lie close to the critical end point in the phase diagram for nuclear matter.

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Roy Lacey
Chem. Dept., Stony Brook University

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