

Abstract Submitted  
for the DNP11 Meeting of  
The American Physical Society

**Higher-order flow harmonics: implications for initial-eccentricity models and the “viscous horizon”<sup>1</sup>** ROY LACEY, Stony Brook University — Flow measurements continue to play an essential role for characterization of the transport properties of the quark gluon plasma produced in heavy ion collisions at both the Relativistic Heavy Ion Collider (RHIC) and the Large Hadron Collider (LHC). The scaling properties of recent higher-order flow measurements will be presented and shown to be compatible with the expected growth of viscous damping for sound propagation in the plasma produced in RHIC and LHC collisions. I will also show that these measurements provide a constraint for distinguishing between the two leading eccentricity models, as well as new estimates for the ratio of viscosity to entropy density  $\eta/s$ , the sound horizon and the “viscous horizon” or length-scale which characterizes the highest harmonic that survives viscous damping.

<sup>1</sup>This research is supported by the US DOE.

Roy Lacey  
Stony Brook University

Date submitted: 05 Jul 2011

Electronic form version 1.4