

Abstract Submitted  
for the DNP06 Meeting of  
The American Physical Society

**Centrality,  $p_T$  and particle-type dependence of azimuthal anisotropy in Au+Au collisions at RHIC** YAN LU<sup>1</sup>, LBNL/IOPP — Anisotropy parameters ( $v_1, v_2, v_4$ , etc...) carry information about interactions at early times in high-energy nuclear collisions. The systematic studies of azimuthal anisotropy may shed light on the relevant initial conditions, the degree of thermalization of the system, the equation of state, and the relevant degrees-of-freedom at the time that the momentum space anisotropy is established. In this talk, I present STAR measurements of identified particle  $v_2$  and  $v_4$  from low  $p_T$  to high  $p_T$  and as a function of collision centrality. These measurements will provide the most complete investigation of hadron-mass ordering, quark-number scaling and particle-type dependencies at very high momentum. Two important consequences indicated from the observation: (i) ‘collective flow’ has developed prior to hadronization – partonic collectivity at RHIC; (ii) partons are flowing in a volume that is much bigger than that of nucleons prior to hadronization.

<sup>1</sup>Yan Lu for STAR collaboration

Yan Lu  
LBNL/IOPP

Date submitted: 30 Jun 2006

Electronic form version 1.4