Abstract Submitted
for the DNP10 Meeting of
The American Physical Society

Event-by-Event Jet Quenching and Higher Fourier Moments of Hard Probes RAINER FRIES, Texas A&M University / RBRC, RICARDO RODRIGUEZ, Texas A&M University / Ave Maria University — We investigate the influence of realistic geometries in high energy nuclear collisions, including inhomogeneities and fluctuations, on the extraction of transport coefficients from high momentum probes. We report that jet quenching calculated event-by-event generally leads to less suppression of single inclusive particle production. Over a wide range of momentum this effect can be absorbed in a redefinition of the quenching strength. After this adjustment the experimentally observed centrality dependence of the nuclear modification factor is described very well. We show, for the first time, a systematic study of higher harmonics v_n of the hadron spectrum at large momentum, including odd momenta which disappear at midrapidity if fluctuations are neglected. We conclude that a limited spatial tomography of the fireball created in nuclear collisions is feasible despite averaging experimental data over many events.

Rainer Fries
Texas A&M University / RBRC

Date submitted: 01 Jul 2010 Electronic form version 1.4