

SYSTEM SIZE DEPENDENCE OF JET-LIKE DI-HADRON
CORRELATIONS IN Au+Au AND Cu+Cu COLLISIONS IN STAR

O. Catu^a for the STAR Collaboration

^aYale University,
New Haven, CT, 06511, USA, *oana.catu@yale.edu*

Results from the experiments at RHIC have shown evidence that a strongly interacting medium is formed in ultra-relativistic heavy ion collisions at RHIC energies. The strongest evidence comes from jet-like di-hadron correlations, which show a strong suppression of the away-side yield in heavy ion collisions but not in d+Au collisions.

We present a systematic study of the near- and away-side di-hadron correlation yields, as a function of number of participant nucleons (N_{part}), for 3 systems with different geometries: d+Au, Au+Au and Cu+Cu, at $\sqrt{s_{NN}} = 200 GeV$ as measured in STAR. Taking the method one step further, we investigate the modification of the away-side di-hadron fragmentation functions for high transverse momentum particles in Au+Au and Cu+Cu. A comparison with theoretical predictions using NLO pQCD is also presented. The calculation allows the determination of the transport coefficient of the medium (\hat{q}) using previous Au+Au data. We compare it with our data for the various centralities in Au+Au and Cu+Cu to explore the path-length dependence of energy loss.