

Abstract Submitted  
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**System size dependence of di-hadron correlations yields and fragmentation functions at RHIC**<sup>1</sup> OANA CATU, Yale University, STAR COLLABORATION — Di-hadron correlations have provided one of the first indications that a strongly interacting medium is formed in ultra-relativistic heavy ion collisions at RHIC. In particular, on the away side of a high  $p_T$  trigger hadron the associated jet-like hadron yield is strongly suppressed at high  $p_T$ , which is interpreted as final-state parton energy loss. 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  $Cu - Cu$  collisions at  $\sqrt{s_{NN}} = 200 GeV$  as measured in STAR. A comparison with theoretical predictions using NLO pQCD is also presented and allows the determination of the transport coefficient of the medium and therefore of the initial gluon density. The study of two systems with different geometries allows the testing of the path length dependence. We also present the near- and away-side yields as a function of number of participants, which could provide more information on the influence of the geometry on the observed triggered correlations.

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