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Systematic Study of Di-Jet Shape Modification in hot QCD matter with the PHENIX detector PAUL CONSTANTIN, Los Alamos National Lab, PHENIX COLLABORATION — Experimental data collected at the Relativistic Heavy Ion Collider suggests the formation of a new state of dense deconfined QCD matter. One of the best tools to probe its properties is the study of its interaction with hard scattered partons that propagate through it. By using the method of di-hadron angular correlations, we study the shape modifications of hadronic di-jets produced from the fragmentation of such partons. We present a systematic study of the away-side ($\Delta\phi \sim \pi$) di-jet induced angular correlations in Au+Au and Cu+Cu collisions at $\sqrt{s_{NN}} = 200$ and 62 GeV in the intermediate (1-5GeV/c) transverse momentum region.

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