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A Jet Shape Study with the STAR Experiment[1] THOMAS GOSART, Rutgers University, Department of Physics and Astronomy , STAR COLLABORATION — In relativistic heavy ion physics, jets are a collection of particles that are emitted from hard scattered partons. They are known to interact strongly within quark-gluon plasma (QGP) produced in heavy ion collisions, a phenomenon known as jet quenching. It has been observed at the LHC that jets' energy deposition and radiation patterns change when they interact with QGP compared to their vacuum baseline. Jet shape observables are expected to be sensitive to these modifications within a jet and its lateral energy distribution. In this study, we utilize data collected by the STAR experiment at RHIC to compare the evolution of jet shape observables in $\sqrt{s_{NN}}$ = 200 GeV proton+proton and Gold+Gold collisions. In particular, we focus on the three jet shape observables $p_T D$, $LeSub$, and g. These measurements allow us to have a better understanding of the jet quenching phenomenon in heavy ion collisions at RHIC. This study offers a complementary look at jet quenching effects.

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