

A Jet Shape Study With the STAR Experiment

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1 In relativistic heavy ion physics, jets are a collection of particles that are
2 emitted from hard scattered partons. They are known to interact strongly within
3 quark-gluon plasma (QGP) produced in heavy ion collisions, which is known as
4 jet quenching. It has been observed at the LHC that jets' energy deposition
5 and radiation patterns change when they interact with QGP compared to their
6 vacuum baseline. Jet shape is an observable that is sensitive to the changes
7 within a jet and its lateral energy distribution. In this study, we utilize data
8 collected by the STAR experiment at RHIC to compare the evolution of the jet
9 shape observable in $\sqrt{s_{NN}} = 200$ GeV proton+proton and Au+Au collisions.
10 Such measurements allow us to have a better understanding of the jet quenching
11 phenomenon in heavy ion collisions at RHIC.