

# 11th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



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Typ: Talk

## Jet shape observables in $p+p$ and $Au+Au$ collisions at $\sqrt{s_{NN}} = 200$ GeV at STAR

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Jets produced from hard scatterings of partons early in heavy-ion collisions traverse through the quark-gluon plasma (QGP) medium and get modified relative to vacuum ( $p+p$  collision) baseline. These modifications can change the distributions of jet shape observables, which are related to jet fragmentation and its internal structure, and calculated based on the intra-jet angular energy distribution. LHC results showed medium-induced modifications to differential jet shape ( $\rho(r)$ , radial distribution of constituents relative to the jet axis) distributions and a prevalence of quark-like fragmentation from Girth (jet angularity),  $p_T^D$  (jet momentum dispersion) and LeSub (splitting between leading and subleading jet constituents) measurements. At RHIC, we are able to study lower energy jets, complementary to those measured at the LHC. Hence measurements of jet shapes at RHIC can help constrain models at different energy scales. In this talk, we present measurements of the fully corrected  $\rho(r)$  in  $p+p$  and  $Au+Au$  collisions at  $\sqrt{s_{NN}} = 200$  GeV collected by the STAR experiment. We also show fully corrected results for Girth,  $p_T^D$  and LeSub in  $p+p$  collisions. Exploratory studies of these observables in  $Au+Au$  collisions will also be discussed.

### Experiment/Theory

STAR

### Affiliation

STAR

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**Track Klassifizierung:** Jets and their modification in QCD matter