

Reconstructed jet probes of small and large systems with the PHENIX detector

Tuesday 24 May 2016 15:30 (20 minutes)

Measurements of the particle jets arising from a hard scattering are valuable experimental tools for understanding the physics of small and large systems created in collisions involving nuclei. In small systems, such as in proton- or deuteron-nucleus collisions, they are useful benchmarks of the effects of the nuclear environment on the initial parton densities or the emerging jet energy. In nucleus-nucleus collision systems, they are sensitive probes of the energy loss experienced by the showers of hard-scattered partons that traverse the hot QCD medium. We present recently published PHENIX results on fully reconstructed jet production rates in 200 GeV proton-proton and deuteron-gold collisions, and a preliminary measurement in copper-gold collisions. In particular, the deuteron-gold measurement has revealed that the traditional frameworks used to understand the collision geometry of small systems break down in extreme hard-scattering kinematic regimes. These measurements represent an important step towards a robust experimental jet program at RHIC.

Collaboration

PHENIX

Primary author: PEREPELITSA, Dennis Vadimovich (Brookhaven National Laboratory (US))

Presenter: PEREPELITSA, Dennis Vadimovich (Brookhaven National Laboratory (US))

Session Classification: Parallel