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Small-system properties as measured with jets and high- p_T azimuthal anisotropy by the CMS experiment

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High-energy jets are produced by the fragmentation of partons (quarks and gluons) that underwent hard scattering in the early stages of a collision. For quite a number of years, jets have been successfully used to probe the properties of the special form of matter, the quark gluon plasma (QGP), formed in high-energy heavy ion collisions. One of the most recognized signatures of the QGP, the jet quenching phenomenon, has been evidenced by a wide range of LHC measurements from lead-lead collisions. More recently, experimental results through multiparticle correlation techniques provided some evidence of possible QGP formation in the smaller colliding systems, such as high-multiplicity proton-proton and proton-lead collisions, but confirmation of the jet quenching expected for QGP remains elusive for such collisions. In this talk, systematic measurements of jet properties are presented for proton-lead collisions data collected by the CMS experiment to search for hot medium production or effects of cold nuclear matter in small systems. Using the subevent cumulant method, multiparticle correlations are also measured for particles with high transverse momentum.

Category

Experiment

Collaboration (if applicable)

CMS

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