

Jet production in p-Pb collisions with ALICE

Jets in Pb-Pb collisions are suppressed relative to the expectations from pp collisions. This is attributed to energy loss in the Quark-Gluon Plasma (QGP). However, to fully quantify the effects due to the hot QGP, we must first quantify the effects from cold nuclear matter. Originally it was believed that collisions of protons on lead nuclei provide access to cold nuclear matter effects in the absence of QGP. However, features observed in two particle correlations for high multiplicity p-Pb collisions are consistent with the formation of a small flowing medium.

ALICE has measured jets in 5.02 TeV in minimum-bias p-Pb collisions at mid-rapidity which are consistent with pp expectations. This implies that even with possible QGP formation, jets are not modified in p-Pb collisions.

The ALICE measurement has been extended to study the multiplicity or centrality dependence of jet production in p-Pb collisions. These results will serve as an important baseline measurement for recently collected 5 TeV Pb-Pb data and can contribute to our knowledge of the nuclear parton distribution functions.

Collaboration

ALICE

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