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Jet production in Pb-Pb collisions in ALICE

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High energy collisions of heavy nuclei permit the study of nuclear matter at temperatures and energy densities. Under these conditions the fundamental theory for strong interactions, QCD, predicts a phase transition to a plasma of quarks and gluons. This matter, called a Quark Gluon Plasma (QGP), has been studied experimentally for the last decade and has been observed to be a strongly interacting liquid with a low viscosity. High energy partons created early in the collision interact with the QGP and provide unique probes of its properties. Studies of these partons through full jet reconstruction and high-momentum particles have demonstrated that the QGP is a strongly interacting, dense medium. Studies of jet-hadron correlations and jet structure can help understand the energy loss mechanism.

We present measurements of jet spectra, jet structure, and jet-hadron correlations in Pb-Pb collisions and discuss the constraints these studies place on partonic energy loss mechanisms in the medium.

Experimental Collaboration

ALICE Collaboration

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