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Overview of jet physics with ALICE at the LHC

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A cross-over “transition” between ordinary nuclear matter and a state of deconfined quarks and gluons, the Quark Gluon Plasma (QGP), is predicted by lattice QCD calculations at low chemical potential and high temperature in the nuclear phase diagram. Experimentally, ultra-relativistic heavy ion collisions are used to produce and study the hot and dense QGP medium.

Produced in a hard scattering at the early stage of the collision a highly energetic parton is first expected to lose energy in the medium before fragmenting into a hadronic spray of particles called jet. A detailed study of the modification of the jet structure and of its fragmentation pattern in vacuum and in medium should provide us with some insights into the QGP properties.

An overview of recent results on jet physics from the ALICE experiment at the LHC will be presented. After presenting results on jet spectra and nuclear modification factors, we will focus on jet structure and fragmentation observables in different sub-systems p-p, p-Pb and Pb-Pb.

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