

Jet shower evolution in medium and di-jet asymmetry in PbPb collisions at the LHC

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We study the evolution of a partonic jet shower propagating through a hot quark-gluon plasma. A differential equation is derived the evolution of the radiated gluon distribution as the jet propagates through the medium. Combined with the in-medium evolution of the leading parton, we compute the depletion of the energy from the jet cone by dissipation through elastic collisions with medium constituents, by scattering of shower partons to larger angles, and by radiation outside the jet cone. Numerical results are presented for the nuclear modification of di-jet energy asymmetry in Pb+Pb collisions at the LHC.

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