Perturbative QCD + saturation: initial conditions for RHIC & LHC

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Abstract

I will discuss the implications of supplementing the standard pQCD computation of minijet production in ultrarelativistic nuclear collisions with saturation of the produced partons. This leads to a dynamical determination of the dominant transverse momentum scale, the saturation scale, of the minijets. The initial multiplicities and transverse energies computed at the saturation scale are converted to measurable quantities by appealing to a rapid thermalization and an isentropic expansion.

Extension of the saturation argument to collisions at nonzero impact parameter is also presented. This allows for a discrimination between models with a fixed minijet cut-off scale and those with a dynamical saturation scale. The results from the pQCD+saturation -model will be compared against the recent results from RHIC.

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