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Entanglement entropy and the Color Glass Condensate

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We compute the entanglement entropy of soft gluons in the wave function of a fast moving hadron and discuss its basic properties. We also derive the expression for entropy production in a high energy hadronic collision within the Color Glass formalism. We show that long range rapidity correlations give negative contribution to the production entropy. We calculate the (naturally defined) temperature of the produced system of particles, and show that it is proportional to the average transverse momentum of the produced particles.

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