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Can we see from jet quenching that quark-gluon plasma becomes more perturbative at LHC than at RHIC

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We study the nuclear modification factor R_AA at RHIC and LHC energies. We account for the radiative and collisional energy losses. Both the contributions are calculated with running \alpha_s accounting for fluctuations of the jet path lengths. The effect of the thermal suppression of \alpha_s is investigated. Comparison of the theoretical results with the experimental data obtained at RHIC and in the ALICE experiment at LHC demonstrates that the experimental R_AA may be described in pQCD with the entropy extracted from the multiplicity data. However for LHC the thermal suppression of \alpha_s should be stronger. This fact demonstrates that at LHC the quark-gluon plasma becomes more perturbative.

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