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Jet quenching in small systems (20+5)

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We discuss recent results on possible jet quenching in collisions of small
systems: in pp, pA and oxygen-oxygen collisions. Calculations of the radiative and collisional parton energy loss are performed for the temperature dependent running QCD coupling. We use parametrization of $\alpha_s(Q,T)$ which has a plateau around $Q \sim \kappa T$ (it is motivated by the lattice calculation of the effective QCD coupling in the QGP). The parameter κ has been fitted to the LHC data on the nuclear modification factor R_{AA} in heavy ion collisions. Using the optimal κ we perform calculations of R_{pp}, R_{pPb}, and R_{AA} and v_2 for O+O collisions. We find that predictions for R_{OO} may differ substantially for scenarios with and without mini-QGP formation in pp collisions.
We show that the available data on R_{pPb} may be consistent with the QGP formation in pp and pPb collisions. However, a scenario with the QGP formation only in pPb collisions is excluded.

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