

# Interplaying mechanisms behind inclusive jet $R_{AA}$ and extraction of jet energy loss distributions

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The observed suppression of inclusive jets in heavy-ion collisions at LHC has a very weak  $p_T$  dependence over a large range of  $p_T = 50\text{-}1000$  GeV and is almost independent of the colliding energy, though the initial energy density of the formed QGP has increased significantly from  $\sqrt{s} = 2.76$  to 5.02 TeV. This interesting phenomenon is fully investigated in the linear Boltzmann transport(LBT) model for jet propagation combined event-by-event 3+1D hydro backgrounds. We found that the  $p_T$  dependence of jet  $R_{AA}$  is determined by the initial spectrum in  $pp$  collisions and jet quenching. Furthermore, the energy loss distribution is extracted directly from experimental data within a Bayesian method, which provides a model-independent approach to understand jet quenching in detail. The extracted jet energy loss distributions have a scaling behavior and indicate that jet quenching is caused on the average by only a few out-of-cone scatterings.

## Publications

Yayun He, Shanshan Cao, Wei Chen, Tan Luo, Long-Gang Pang, Xin-Nian Wang. Phys. Rev. C 99 (2019) 054911, arXiv:1809.02525. Yayun He, Long-Gang Pang, Xin-Nian Wang. Phys. Rev. Lett. 122 (2019) 252302, arXiv:1808.05310.

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