

Quenching of Hadron Spectra in Heavy Ion Collisions at the LHC

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The p_{\perp} dependence of the nuclear modification factor R_{AA} measured in PbPb collisions at the LHC exhibits a universal shape, which can be very well reproduced in a simple energy loss model based on the BDMPS medium-induced gluon spectrum. The scaling is observed for various hadron species (h^{\pm} , D, J/ψ) in different centrality classes and at both colliding energies, $\sqrt{s}=2.76$ TeV and $\sqrt{s}=5.02$ TeV. Results indicate an 10-20% increase of the transport coefficient from $\sqrt{s}=2.76$ TeV to $\sqrt{s}=5.02$ TeV, consistent with that of particle multiplicity. Based on this model, a data-driven procedure is suggested, which allows for the determination of the first and second moments of the quenching weight without any prior knowledge of the latter.

Summary

Author: ARLEO, Francois (Laboratoire Leprince-Ringuet)

Presenter: ARLEO, Francois (Laboratoire Leprince-Ringuet)

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