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D and B RAA(p_T, η) for $\sqrt{s} = 2.76 - 5.5$ TeV from AdS/CFT

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We present the latest predictions from AdS/CFT for D and B meson suppression $R_{AA}(p_T, \eta)$ and $v_2(p_T, \eta)$ in Pb+Pb collisions of various centrality classes at multiple LHC center-of-mass energies. Included in these predictions are systematic theoretical uncertainties due to the currently incomplete understanding of strongly-coupled energy loss and from mapping QCD onto $N=4$ SYM.

By comparing to baseline p+p data, we establish the inadequacy of current NLO schemes at describing the rapidity dependence of heavy flavor production. Using FONLL heavy flavor production, which does reproduce the rapidity dependence in p+p collisions, we then compare to current D and B meson measurements. Our results show good qualitative agreement with data, suggesting a consistent picture of strongly-coupled quark-gluon plasma formation from low- p_T observables to high- p_T observables.

Collaboration

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