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D and B meson Energy loss and Azimuthal Anisotropy in a Strongly Coupled Plasma in pA collisions at $\sqrt{s_{NN}} = 200$ GeV

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We present energy loss predictions of B and D-mesons at $\sqrt{s} = 200$ GeV in pA collision systems. We assume that the medium produced in these collisions is strongly coupled, and show the centrality and momentum dependence of the nuclear modification factor at midrapidity. We also quantify the systematic theoretical uncertainties in these predictions that are a result of the mapping of parameters in $\mathcal{N} = 4$ SYM theory to QCD, as well as the momentum dependence of the diffusion coefficient in AdS/CFT. We then present results of the corresponding $v_2(p_T)$ for B and D-mesons describing this azimuthal anisotropy for central, semi-central and peripheral collisions.

Category

Theory

Collaboration (if applicable)

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