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Energy Loss in Deep Inelastic Di-Hadron Production Using the Color Glass Condensate Formalism¹ FILIP BERGABO, JAMAL JALILIAN-MARIAN, The Graduate Center, City University of New York — Recent studies have found away-side peak suppression in produced particle correlations in pA collisions when compared to pp collisions. Possible causes of this suppression include gluon shadowing and energy loss. Energy loss is a result of radiation carrying away a portion of the partons energy, and can be computed as the difference of the ratio of cross sections between a nucleus target and a proton target. We expect that similar peak suppression will be found in deep inelastic scattering experiments, so it is important to predict the contribution to this suppression from both gluon shadowing and energy loss. Here we calculate the energy loss in a deep inelastic collision of an electron and a heavy nucleus that produces a pair of hadrons in the final state. The energy loss is also part of the real next-to-leading order corrections to deep inelastic di-hadron production. We model the heavy nucleus as a classical background field using the color glass condensate effective theory of QCD.

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