

Revisiting the Dihadron Angular Correlations in Forward pA collisions

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Dihadron angular correlations in forward pA collisions provide a sensitive probe of gluon saturation effects. In these processes, both gluon saturation and parton shower dynamics contribute to the observed de-correlation between back-to-back dihadron pairs. In our study, we employ the Color Glass Condensate (CGC) framework to perform a detailed numerical investigation of dihadron correlations at forward rapidities. We utilize the improved Transverse Momentum Dependent (ITMD) factorization scheme designed for small- x physics and incorporate parton shower effects by including the corresponding Sudakov factor. Our results show good agreement with STAR data in both pp and pAu collisions. Additionally, we present predictions for dihadron correlations within the FOCAL kinematic ranges to be explored at the LHC. We will also discuss the progress on developing an event generator that couples CGC calculations with Pythia to further study these correlations.

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