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Next to Leading Order corrections to dihadron production in DIS

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We calculate the Next to Leading Order corrections to dihadron production in DIS at small x using the Color Glass Condensate frame work. We show that all UV and soft divergences cancel against each other. The remaining rapidity divergences lead to JIMWLK evolution of the Leading Order cross section while the collinear divergences lead to DGLAP evolution of parton-hadron fragmentation functions. We then consider the back-to-back limit of our result and relate it to the target TMD distributions. We show that one can use our results to obtain the NLO corrections to single inclusive hadron production as well as the structure functions in DIS at small x .

Work done with F. Bergabo, based on arXiv:2207:03606

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