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Sum rules for multi-parton distributions, and the Pythia MPI model

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Multi-parton distributions are the non-perturbative quantities needed to make predictions for multiple scattering rates. These are poorly constrained from theory and data, and must be modelled. For double parton scattering, some important theoretical constraints on the relevant distributions were derived in 2009: the momentum and number sum rules. Here we derive the corresponding sum rules for the triple parton distributions. We discuss how well the double and triple parton distributions produced by the Pythia model of MPI satisfy these sum rules, and then describe how the Pythia predictions for double Drell-Yan production via DPS compare to those obtained via other approaches, including the most naive “pocket formula” approach.

Declaration

I certify that I have checked that I am authorised to submit the abstract with the listed co-authors with their current affiliations

Change of Speaker

I understand that change of speaker is allowed provided that no participant gives more than one talk. Otherwise, we will ask the speaker to choose between one or the other abstract to be presented.

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