

Transverse-momentum resummation for Drell-Yan production at NNLL accuracy

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We consider the transverse-momentum (q_T) distribution of Drell-Yan lepton pairs produced in hadron collisions. At small values of q_T , we resum the logarithmically-enhanced perturbative QCD contributions up to next-to-next-to-leading logarithmic accuracy. At intermediate and large values of q_T , we consistently combine resummation with the known next-to-leading order perturbative result. All perturbative terms up to order α_S^2 are included in our computation which, after integration over q_T , reproduces the known next-to-next-to-leading order result for the Drell-Yan total cross section. We show and discuss the reduction in the scale dependence of the results with respect to lower-order calculations, estimating the corresponding perturbative uncertainty. We present a preliminary comparison with Tevatron Run II data.

Primary author: Dr FERRERA, Giancarlo (University of Florence)

Co-authors: DE FLORIAN, Daniel (University of Buenos Aires); Dr BOZZI, Giuseppe (University of Milan); Dr GRAZZINI, Massimiliano (INFN Florence); Dr CATANI, Stefano (INFN Florence)

Presenter: Dr FERRERA, Giancarlo (University of Florence)

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