

Combining QED and QCD transverse-momentum resummation for vector boson production at hadron colliders

Wednesday, November 27, 2019 9:30 AM (20 minutes)

We consider the transverse-momentum (q_T) distribution of Z bosons produced in hadronic collisions. At small values of q_T , we perform the analytic resummation of the logarithmically enhanced QED contributions up to next-to-leading logarithmic accuracy, including the mixed QCD-QED contributions at leading logarithmic accuracy. Resummed results are consistently matched with the next-to-leading fixed-order results at small, intermediate and large values of q_T and combined the known QCD results. We show numerical results at LHC and Tevatron energies, studying the impact of the QED corrections and providing an estimate of the corresponding perturbative uncertainty. We show preliminary results about the extension of our analytic results, valid for the production of generic neutral and colourless high-mass systems in hadronic collision, to the case of charged W boson production.

Primary author: FERRERA, Giancarlo (MI)

Co-authors: Dr CIERI, Leandro Javier (Istituto Nazionale di Fisica Nucleare - Sez. Milano Bicocca); SBORLINI, German Fabricio Roberto (M)

Presenter: FERRERA, Giancarlo (MI)

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