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CuTe-MCFM: Fiducial q_T resummation for color-singlet processes at N³LL+NNLO

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We present a framework for q_T resummation at N³LL+NNLO accuracy for arbitrary color-singlet processes based on a factorization theorem in SCET. Our implementation CuTe-MCFM is fully differential in the Born kinematics and matches to large- q_T fixed-order predictions at relative order α_s^2 . It provides an efficient way to estimate uncertainties from fixed-order truncation, resummation, and parton distribution functions. In addition to W[±], Z and H production, also the diboson processes $\gamma\gamma$, Z γ , ZH and W[±]H are available, including decays. We discuss and exemplify the framework with direct comparisons to experimental measurements as well as inclusive benchmark results.

Summary

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