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CuTe-MCFM: Fiducial q_T resummation for color-singlet processes at N^{3}LL+NNLO

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We present a framework for q_T resummation at N^{3}LL+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$^\pm$, Z and H production, also the diboson processes γγ, Zγ, ZH and W$^\pm$H are available, including decays. We discuss and exemplify the framework with direct comparisons to experimental measurements as well as inclusive benchmark results.

Summary

Primary authors: NEUMANN, Tobias (Brookhaven National Laboratory); BECHER, Thomas (University of Bern)

Presenter: NEUMANN, Tobias (Brookhaven National Laboratory)

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