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Analytic resummation of TMD distributions in momentum space in SCET_II.

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We study the transverse momentum spectra of gauge bosons (Z , γ^* , Higgs) in PP collisions in the regime of low transverse momentum. We also develop a scheme of resummation allowing us to choose the factorization scale for virtuality in momentum space which is then applied to obtain the transverse momentum spectra for the Drell-Yan and Higgs at NNLL accuracy. Using this scheme, we show, for the first time, how an analytic formula for these cross sections can be obtained at each order of resummation. Finally, a comparison with other resummation schemes is presented along with a discussion of possible non-perturbative effects.

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