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Transverse Momentum Dependent splitting kernels from k_T -factorization

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Transverse Momentum Dependent parton distribution functions allow to take into account apart from the proton momentum fraction also transverse momenta of initial partons in the description of hadronic cross-section. They are therefore a promising tool to obtain a more precise description of kinematics of hadronic observables. In this talk we present our most recent results in the determination of transverse-momentum-dependent splitting kernels, started in refs. [arXiv:1711.04587, arXiv:1607.01507, arXiv:1511.08439]. Our approach is based on a combination of high energy and collinear factorization and aims at the formulation of a generalized TMD framework. So far we obtained a complete set of real-emission kernels (P_{gg} , P_{gq} , P_{qq} and P_{qg}) at leading order. After introducing the methods used for defining and computing the real contributions, we concentrate on the current effort aiming at the determination of virtual corrections. We further will provide details on the possible relation of our framework to existing QCD operator definitions of TMD distribution.

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