

Transverse-momentum resummation for heavy-quark production at hadron colliders

Thursday, 8 September 2016 14:45 (30 minutes)

I discuss the all-order transverse momentum resummation structure for the hadroproduction of heavy-quark pairs. I present some numerical results for the resummed q_T spectrum of heavy-quark pairs at next-to-leading logarithmic (NLL) order. I also discuss the azimuthal correlations produced by soft parton radiation, which are entangled with those that are produced by initial-state collinear radiation. The knowledge of the small- q_T limit of the transverse-momentum cross section enables us to perform a fully exclusive fixed-order calculation up to NNLO in the framework of q_T -subtraction method. I present the results of our first calculation which is accurate up to NLO in QCD perturbation theory and it includes all the flavour off-diagonal partonic channels at NNLO.

Summary

I discuss the all-order transverse momentum resummation structure for the hadroproduction of heavy-quark pairs. I present some numerical results for the resummed q_T spectrum of heavy-quark pairs at next-to-leading logarithmic (NLL) order. I also discuss the azimuthal correlations produced by soft parton radiation, which are entangled with those that are produced by initial-state collinear radiation. The knowledge of the small- q_T limit of the transverse-momentum cross section enables us to perform a fully exclusive fixed-order calculation up to NNLO in the framework of q_T -subtraction method. I present the results of our first calculation which is accurate up to NLO in QCD perturbation theory and it includes all the flavour off-diagonal partonic channels at NNLO.

Primary author: SARGSYAN, Hayk (University of Zurich)

Presenter: SARGSYAN, Hayk (University of Zurich)