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NLO QCD corrections to triple collinear splitting functions

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We present splitting functions in the triple collinear limit at next-to-leading order in the strong coupling. We performed the computation in the context of massless QCD+QED, and consider first collinear processes which include at least one photon. The IR divergent structure of the multi-partonic splitting functions agrees with the Catani's formula. Consistency checks based on symmetry arguments have been implemented and results for different configurations have been cross-checked. Studying photon-started processes, we obtained very compact results which led us to conclude that it is not possible to generalize crossing-like identities involving the parent parton.

Summary

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