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Higher order corrections for jet physics at the LHC

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Collimated jets of hadrons serve as precision tests of the standard model and in particular QCD. For example, jets observables have been applied extensively to constrain parton distribution functions and to probe the hot and dense medium created in heavy-ion collisions, as well as to the search for physics beyond the standard model. In this talk, I will mainly focus on recent higher order corrections for jet production cross sections at the LHC. Recently significant progress has been made toward achieving an improved understanding both at fixed order and using all order resummation techniques. In addition, I will discuss several high precision results for jet substructure observables relevant for the LHC physics program both in proton-proton and heavy-ion collisions.

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