

QCD@LHC2022

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NNLO QCD corrections to $W+2$ b-jet production

Monday 28 November 2022 14:20 (15 minutes)

I present theoretical predictions for the production of a W-boson in association with a bottomquark pair at hadron colliders at next-to-next-to-leading order (NNLO) in QCD, including the leptonic decay of the W-boson, while treating the bottom quark as massless. This calculation constitutes the very first $2 \rightarrow 3$ process with a massive external particle to be studied at such a perturbative order. Numerical results for the cross section and differential distributions are presented for the Large Hadron Collider. The definition of IRC-safe flavoured jets becomes subtle beyond NLO QCD. I discuss the application of a proposed flavour safe anti- k_T algorithm to this process and discuss the phenomenology.

Declaration

I certify that I have checked that I am authorised to submit the abstract with the listed co-authors with their current affiliations

Change of Speaker

I understand that change of speaker is allowed provided that no participant gives more than one talk. Otherwise, we will ask the speaker to choose between one or the other abstract to be presented.

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