QCD@LHC2022
28 November 2022 to 2 December 2022
IJCLab Orsay, France

Contribution ID: **87** Type: **not specified**

Cancellation of NNLO singularities within Local analytic sector subtraction

Wednesday 30 November 2022 16:00 (15 minutes)

In this talk, we present the next-to-next-to-leading-order (NNLO) subtraction formula for local cancellation of infrared (IR) divergences for final-state radiation in massless QCD, applying to generic IR-safe observables. Such general and automated algorithm has been developed within the framework of Local analytic sector subtraction. We explicitly show the features of the method and investigate a comprehensive treatment of singularities, which is ultimately necessary to ensure the locality of the subtraction. After performing the counterterms integration, we analytically verify the cancellation of the explicit ϵ poles coming from the double-virtual contribution for processes with an arbitrary number of final-state partons, thus obtaining as a final result a compact (as well as analytic) finite remainder and a formula suitable for direct numerical implementation, paving the way to further validations and the production of relevant phenomenological results.

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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Session Classification: Parallel B - WG1: 2

Track Classification: WG1: Higher Order and Resummed Calculations