# QCD@LHC2022
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### IJCLab Orsay, France

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# Soft logarithms in processes with heavy quarks

*Tuesday 29 November 2022 14:00 (15 minutes)*

Observables involving heavy quarks can be computed in perturbative QCD in two different approximation schemes: either the quark mass dependence is fully retained, or it is retained only where needed to regulate the collinear singularity. The two schemes have different advantages and drawbacks. In particular, it is known that the structure of large logarithms arising from soft emissions is different in the two approaches. We investigate the origin of this difference in some detail, focussing on a few specific processes. We show that it is related to the non-commutativity of the small-mass and soft-emission limits. Finally, we perform the resummation of soft-emission logarithms to next-to-leading accuracy in the case of Higgs decay into a $b\bar{b}$ pair, in the scheme in which the quark mass dependence is fully accounted for.

## 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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