

Open bottom production at hadron colliders at NNLO+NNLL

Thursday, 12 September 2024 15:20 (25 minutes)

In this talk, I will present the first calculation of open bottom production at hadron colliders at NNLO+NNLL, i.e. a next-to-next-to-leading-order calculation that resums collinear mass logarithms at next-to-next-to-leading-logarithmic accuracy. This new computation achieves significantly reduced scale uncertainties compared to previous calculations, with errors of just a few percent at high transverse momenta. I will explain how two separate calculations, one with $n_f = 4$ and one with $n_f = 5$, are combined and matched to obtain the final NNLO+NNLL result. To perform comparisons to data, the hadronisation and decay of the b-quark is included in the theory calculation where needed, yielding predictions for a wide range of final states.

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Session Classification: Resummation, Parton Showers and Monte-Carlo

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