

# QCD@LHC2022

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## Bottom pair production at next-to-next-to-leading order matched to parton shower

*Monday 28 November 2022 14:00 (15 minutes)*

We present new high precision predictions for bottom-quark pair production in hadronic collisions. These results are obtained through the implementation of a Monte Carlo event generator in the Powheg-Box framework, where the MiNNLOps method has been applied to match the next-to-next-to-leading order (NNLO) calculation to parton showers. Distributions inclusive over QCD radiation are NNLO accurate, while distributions for bottom-quark pair production in association with one final-state hard jet are next-to-leading order accurate. We validate our results against a fixed-order NNLO calculation and present a first comparison of NNLO+PS predictions with experimental data from the LHC.

### 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 - WG2: 1

**Track Classification:** WG2: Event Simulations and Monte Carlo Tools