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NNLO+PS predictions for Z boson production in association with b-jets at the LHC

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We present the first NNLO-accurate event generation for Z boson production in association with a bottom-quark pair. This is achieved by matching the NNLO calculation in the 4FS to a parton shower within the MiNNLO$_{\rm PS}$ method, which we extend to accommodate the class of processes with a color singlet and a heavy-quark pair in the final state. We find that NNLO corrections to $Zb\bar{b}$ production are large and remarkably reduce the tension between 4FS predictions and Z+b-jet ATLAS and CMS measurements. The long-standing discrepancy between 4FS and 5FS predictions is therefore largely alleviated.

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