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Characterisation of the NLO cross sections for the associated production of dark matter with heavy quarks

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Searches for dark matter produced in association with heavy quarks using collider data are starting to probe an interesting region of the parameter space, becoming quickly competitive with more traditional searches. Higher order corrections provide a sizeable impact on the total production rate of these models. In this proceedings we study the dependence of the next-to-leading order cross sections on the PDF and renormalisation and factorisation scales choices. Furthermore we address for the first time the dark matter production with bottom quarks scenario, proposing a final recommendation for the cross section calculation of this final state.

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