

# Four-top production at the LHC: improving predictions with invariant-mass threshold resummation.

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We present new results for the invariant-mass distribution and total cross section for four-top production, incorporating the resummation of soft-gluon corrections at improved next-to-leading logarithmic accuracy, including non-logarithmic  $\mathcal{O}(\alpha_s)$  terms (NLL' accuracy). After discussing the challenges of invariant-mass threshold resummation in processes with six coloured legs, we present our resummed predictions matched to fixed-order NLO calculations. Our results modify the shape of the fixed-order invariant-mass distribution and significantly reduce theoretical uncertainties.

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