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Tops at two loops, integral reductions and multiple polylogarithms

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Abstract

Matching the experimental precision for top quark pair production at the LHC requires NNLO theory predictions. In this talk, I discuss recent progress for the analytical calculation of the two loop corrections. Special emphasis is placed on technical aspects of the approach and structural features of the results. This includes a discussion of the Feynman integral reduction program Reduze 2. Further, I will introduce Goncharov's multiple polylogarithms and discuss modern techniques for their treatment, such as the symbol calculus.