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# Planar two-loop corrections to Higgs+jet production in QCD

*Friday 18 November 2016 10:00 (1 hour)*

We will review the calculation of the two-loop QCD amplitudes that contribute to the NLO cross section for the production of a Higgs boson with a jet (or to Higgs decay to three partons). In particular we concentrate on planar corrections, we discuss the structure of the amplitude in terms of helicity amplitudes, their expression in terms of dimensionally regularized Feynman integrals and, finally, the reduction to the master integrals and their calculation with the differential equations method. We show a class of four-point functions that show an elliptic behaviour, i.e. whose differential equation can be solved in terms of complete elliptic integrals.

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