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Higgs-boson production in top-quark fragmentation

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We compute the fragmentation functions for the production of a Higgs boson at order $\mathcal{O}(y_t^2 \alpha_s)$. Real and virtual corrections have been computed by using modern loop computation techniques. In particular, we combine the unitary cut method with the differential equation approach. We find the criteria to bring the master integrals in canonical form, so that their computation is analytically performed, order by order in the dimensional regulator ϵ . Our results can be used to compute differential cross sections with arbitrary top-quark and Higgs-boson masses from massless calculations. They can also be used to resum logarithms of the form $\ln(p_T/m)$ at large transverse momentum p_T to next-to-leading-logarithmic accuracy by solving the DGLAP equations.

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