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Non-singlet and pure-singlet heavy flavor contributions to deep-inelastic scattering

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Deep-inelastic ep scattering receives essential contributions from heavy flavors. The determination of the strong coupling constant α_s and the charm quark mass m_c are sensitive to NNLO corrections. In the asymptotic region where the momentum transfer Q^2 is large compared to the mass of the heavy quark m^2 the heavy flavor contributions factorize into massless Wilson coefficients and massive operator matrix elements (OMEs). For F_2 the formulae hold from $Q^2/m^2 > 10$ onward. We present results of the calculation of the non-singlet and pure-singlet heavy flavor Wilson coefficients and the corresponding OMEs to three loop order. Details on the calculation will be given as well as numerical predictions for the contribution in the non-singlet and pure singlet case to the structure function F_2 , which are relevant for experiments.

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