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# Analytic calculation of two-loop QCD corrections to b\to s\ell^+\ell^- in the high q^2 region

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## Please give a brief summary of your poster

We present our results for the NNLL virtual corrections to the matrix elements of the operators O_1 and O_2 for the inclusive process b\to s\ell^+\ell^- in the kinematical region q^2>4m_c^2, where q^2 is the invariant mass squared of the lepton-pair. This is the first analytic two-loop calculation of these matrix elements in the high q^2 region. We give the matrix elements as an expansion in m_c/m_b and keep the full analytic dependence on q^2. Making extensive use of differential equation techniques, we fully automatize the expansion of the Feynman integrals in m_c/m_b. To this end we invented a new method based on sector decomposition and Mellin-Barnes techniques, which allows to obtain the coefficients of the expansion in terms of finite integrals.
Finally we confirmed the results of an earlier numerical calculation from Ghinculov et al. which are not publicly available as a function of m_c/m_b and q2.

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