Towards a full NNLO QCD calculation of $\Delta\Gamma$ in the $B\mathchar`-\overline{B}$ system

Monday 15 April 2024 17:30 (30 minutes)

In this talk I will discuss recent advances made in the calculation of the NNLO QCD corrections to the width difference between B and B mesons. This work focuses on the perturbative high-energy part of the calculation, more specifically the matching coefficients between the Δ B = 1 effective operators of the Weak Interaction and the Δ B = 2 transition operator are calculated as a deep expansion in mc/mb.

This calculation yields novel results for the NNLO contributions with penguin operators which had not been considered previously at this order. Moreover, the NNLO contributions with two current-current operators, which were previously only known up to O(mc/mb), are calculated to a higher precision.

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