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# Five-particle contributions to the inclusive rare $\bar{B} \to X_{s(d)}\ell^+\ell^-$ decays

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We calculate tree-level contributions to the inclusive rare $\bar{B} \to X_{s(d)}\,\ell^+\ell^-$ decays. At the partonic level they stem from the five-particle process $b \to s(d)\,q\bar{q}\,\ell^+\ell^-$, with $q \in \{u, d, s\}$. While for $b \to d$ transitions such five-body final states contribute at the same order in the Wolfenstein expansion compared to the three-body partonic decay, they are CKM suppressed in $b \to s$ decays. In the perturbative expansion, we include all leading-order contributions, as well as partial next-to-leading order QCD and QED effects.

In the case of the differential branching ratio, we present all results completely analytically in terms of polylogarithmic functions of at most weight three. We also consider the differential forward-backward asymmetry, where all except one interference could be obtained analytically. From a phenomenological point of view the newly calculated contributions are at the percent level or below. A phenomenological update on $\bar{B} \to X_{s(d)}\ell^+\ell^-$ results will also be presented.

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