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Lepton flavor violating meson decays

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We argue that lepton flavor violating (LFV) decays $M \rightarrow \ell_1 \bar{\ell}_2$ of quarkonium and heavy quark meson states M with different quantum numbers could be used to put constraints on the Wilson coefficients of effective operators describing LFV interactions at low energy scales. We note that the restricted kinematics of the two-body decay of quarkonium or a heavy quark meson allows us to select operators with particular quantum numbers, significantly reducing the reliance on the single operator dominance assumption that is prevalent in constraining parameters of the effective LFV Lagrangian. We shall also argue that studies of radiative lepton flavor violating $M \rightarrow \gamma \ell_1 \bar{\ell}_2$ decays could provide important complementary access to those effective operators.

Summary

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