

Rare $B_s \rightarrow l^+l^-$ decays in a Two-Higgs-Doublet model of type III

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Leptonic decays of neutral B mesons provide an excellent probe of physics beyond the Standard Model, due to the absence of tree-level flavour-changing neutral currents in the Standard Model and the corresponding smallness of the branching ratio. We present a Two-Higgs-Doublet model in which flavour-changing neutral Higgs couplings to up-type quarks can lift part of the SM suppression. The model contains three Yukawa spurions, allowing to systematically suppress FCNC couplings in the down-type quark sector. Within this model, the leading contributions to the scalar and pseudoscalar Wilson coefficients are calculated through next-to-leading order in QCD. Several experimental constraints from other $|\Delta B| = 1$ and $|\Delta B| = 2$ processes are discussed.

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