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## Rare $B_s \rightarrow l^+ l^-$ decays in a two-Higgs-doublet model with Three Spurions

*Wednesday, October 18, 2023 11:00 AM (30 minutes)*

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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