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## Non-universal $Z'$ models with protected flavour-changing interactions

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We define a new class of  $Z'$  models with neutral flavour-changing interactions at tree level in the down-quark sector. They are related in an exact way to elements of the quark mixing matrix due to an underlying flavoured  $U(1)'$  gauge symmetry, rendering these models particularly predictive. The same symmetry implies lepton-flavor non-universal couplings, fully determined by the gauge structure of the model. Our models allow to address presently observed deviations from the SM and specific correlations among the new physics contributions to the Wilson coefficients  $C_{9,10}^{(\prime)\ell}$  can be tested in  $b \rightarrow s\ell^+\ell^-$  transitions. We furthermore predict lepton-universality violations in  $Z'$  decays, testable at the LHC.

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