

Flavorful leptoquarks at the LHC and beyond: Spin 1

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Evidence for electron-muon universality violation that has been revealed in $b \rightarrow s\ell\ell$ transitions in the observables R_{K,K^*} by the LHCb Collaboration can be explained with spin-1 leptoquarks in $SU(2)_L$ singlet V_1 or triplet V_3 representations in the $\mathcal{O}(1-10)$ TeV range. We explore the sensitivity of the high luminosity LHC (HL-LHC) and future proton-proton colliders to V_1 and V_3 in the parameter space connected to R_{K,K^*} -data. Future sensitivity projections based on extrapolations of existing ATLAS and CMS searches are worked out. While there is the exciting possibility that leptoquarks addressing the R_{K,K^*} -anomalies are observed at the LHC, to fully cover the parameter space pp-collisions beyond the LHC-energies are needed.

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