

Leptoquark option for B-meson anomalies and leptonic signatures

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We entertain the option of scalar leptoquarks to explain the anomalies in the semi-leptonic decays of B-mesons and the discrepancies in the lepton $(g-2)l$'s including the recent results at Fermilab E989. The $RK(*)$ and $RD(*)$ anomalies can be accommodated by the specific couplings for triplet and singlet leptoquarks, respectively, subject to the bounds from $B \rightarrow K \nu \bar{\nu}$. We discuss the correlation between the leptonic signatures from leptoquarks such as $\mu \rightarrow e \gamma$ and the electric dipole moment of electron and show that desirable neutrino masses can be generated dominantly by top-quark loops in the extension of the model with several doublet leptoquarks.

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