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(G*) Vector like Quarks in Rare B-Decays

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This study investigates the impact of vector-like quarks on rare B-decays, focusing on recent experimental searches. Vector-like quarks, an intriguing feature of many extensions beyond the Standard Model (SM), offer a unique avenue for probing physics BSM. We consider extending the standard Model by adding a vector-like isosinglet down-type quark. Experiments at LHCb and Belle II are actively studying rare B transitions like exclusive semileptonic $B \rightarrow K \nu \bar{\nu}$ decays. Therefore, by analyzing the underlying quark $b \rightarrow s$ semileptonic transitions, we investigate deviations from the Standard Model due to vector-like quarks, utilizing the latest experimental constraints on the model parameters.

Keyword-1

Vector-Like Quarks

Keyword-2

B-Decays

Keyword-3

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