

Semileptonic decays $B_s \rightarrow D_s^{(*)} \tau \nu$ as probe for new physics

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We study the semileptonic decays $B_s \rightarrow D_s^{(*)} \tau \nu$ as a promising probe for new physics (NP) beyond the standard model (SM). The extension of the SM is done through the introduction of four-fermion operators beyond the $V - A$ structure with the corresponding Wilson coefficients characterizing their contribution. The constraints on these coefficients are obtained from recent experimental data. Form factors describing hadron transitions are calculated in our covariant quark model with infrared confinement. Theoretical predictions for the full set of observables in these channels are provided. We compare our results with other studies and analyze possible NP effects to be tested in future experiments.

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