

Portoroz 2013: Probing the Standard Model and New Physics at Low and High Energies

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New physics from $B \rightarrow D^* \tau \nu$

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Semi-leptonic B decays are important test of the Standard Model (SM) and present the possibility to explore the effects of physics Beyond Standard Model (BSM). Decays involving tau leptons in the final state are interesting due to the tau mass effects which allow to probe the contributions to the decay rate which are not present in the decay containing light lepton in final state. Recently, BaBar Collaboration observed deviations from the SM predictions in $B \rightarrow D^{(*)} \tau \nu$. To account for the anomaly, we supplement the SM Hamiltonian with a set of low dimensional effective operators that can influence the $b \rightarrow c$ transitions. If confirmed, the deviation leads to some interesting implications which are the subject of our study.

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