

Implications of new physics in $\Lambda_b \rightarrow \Lambda_c \ell \nu_\ell$ decay processes.

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Several indications of lepton non universality ratios, R_{D^*} , $R_{J/\psi}$ and the measurements on hadronic and τ longitudinal polarizations in $b \rightarrow c\tau\bar{\nu}_\tau$ processes have attracted a lot of attentions. By considering the most general effective Lagrangian, we carry out a model independent analysis of the semileptonic Λ_b decays, to inspect the nature of new physics. We constraint the new physics parameter space by using the measured branching ratios of $B_c^+ \rightarrow \tau^+\nu_\tau$ and the keep going experimental results on R_{D^*} , $R_{J/\psi}$ through a chi square fitting. We study the implications of constrained new couplings on the observable such as branching fractions, forward-backward asymmetries, lepton non universality parameter and Λ_c and lepton longitudinal polarization fractions of the decay modes. Additionally, we also probe whether there could be any lepton universality violation in this decay processes.

What is your topic?

Lepton universality and flavour violation

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