The 16th International Workshop on Tau Lepton Physics (TAU2021) (Virtual Edition)

Contribution ID: 85

## Type: Poster contribution

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

Friday 1 October 2021 10:50 (2 hours)

Several indications of lepton non universality ratios,  $R_{D^*}$ ,  $R_{J/\psi}$  and the measurements on hadronic and  $\tau$  longitudinal polarizations in  $b \to c\tau \bar{\nu_{\tau}}$  processes have attracted a lot of attentions. By considering the most general effective Lagrangian, we carry out a model independent analysis of the semileptonic  $\Lambda_b$  decays, to inspect the nature of new physics. We constraint the new physics parameter space by using the measured branching ratios of  $B_c^+ \to \tau^+ \nu_{\tau}$  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  $\Lambda_c$  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

Author: Ms BHATTA, Aishwarya (University of Hyderabad)Presenter: Ms BHATTA, Aishwarya (University of Hyderabad)Session Classification: Poster session: Breakout room 8

Track Classification: Tau2021 Abstracts