

Mini-workshop on $D^{(*)}$ tau nu and related topics

Contribution ID : 18

Test of lepton universality with $B \rightarrow p \bar{p} l \nu$ decays

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Content :

Given on behalf of the LHCb collaboration:

Should the discrepancy between theoretical predictions and measurements of $R(D^{*})$ and $R(D)$ persist with new data at LHCb and Belle II it will be important to measure lepton non-universality in transitions other than $b \rightarrow c$ in order to characterise the underlying physics causes. With the large dataset of semi-leptonic decays collected by LHCb in Run 1 and Run 2 even modes that are not CKM favoured are able to be probed. Here a proposal for such a measurement at LHCb with a $b \rightarrow u$ transition via $B \rightarrow p \bar{p} l \nu$ will be presented. Such an analysis will probe different and complementary physics to the previous $R(D)$ and $R(D^{*})$ measurements. The steps towards a measurement of $R(p \bar{p})$ at LHCb will be outlined with the experimental and theoretical challenges highlighted.

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