

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

Contribution ID : 14

B_c meson lifetime and the shape of New Physics in $B \rightarrow D^{(*)} \tau \nu$

Monday 27 Mar 2017 at 18:00 (00h35')

Content :

We investigate a new constraint on new-physics interpretations of the anomalies observed in $B \rightarrow D^{(*)} \tau \nu$ decays making use of the lifetime of the B_c meson. A constraint is obtained by demanding that the rate for $B_c \rightarrow \tau \nu$ does not exceed the fraction of the total width that is allowed by the calculation of the lifetime in the standard model. The new constraint renders a scalar interpretation of the enhancement measured in $R_{D^{(*)}}$ implausible. We also discuss the complementarity of $R_{D^{(*)}}$ and a measurement of the longitudinal polarization of the tau in the $B \rightarrow D^{(*)} \tau \nu$ decay in light of our findings.

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