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LFU tests in semileptonic decays at LHCb

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Lepton Flavor Universality (LFU) is a fundamental principle in the Standard Model (SM) of particle physics, stating that the interactions of different generations of leptons with the weak force should be identical. However, experimental observations in the last decade have hinted at potential violations of LFU by comparing the ratios of branching fractions of semileptonic $b \to c\ell\nu$ decays into final states involving τ and light leptons. Besides these ratios of branching fractions, other observables have been proposed in the literature to further test the SM and constrain possible sources of New Physics.This talk presents the most recent results of the LFU tests performed at LHCb. These tests examine the ratio of branching fractions of $B \to D^{(*)}\tau\nu$ and $B \to D^{(*)}\mu\nu$ decays, and the polarization of D^* is analyzed in $B \to D^{(*)}\tau\nu$ decays in two bins of the four-momentum transferred to the $\tau\nu$ pair.

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