

Searches for CLFV in tau and hadron decays at Belle and Belle II

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Rates of lepton-flavor violation in charged lepton decays are enhanced in many beyond-the-standard-model theories. The low-background samples of $e^+e^- \rightarrow \tau^+\tau^-$ events collected by Belle and Belle II allow world-leading searches for such decays with tau leptons. We present Belle II results for the decays $\tau \rightarrow \ell V^0$, where V^0 is a neutral vector meson, $\tau \rightarrow 3\mu$, $\tau \rightarrow \Lambda\pi$ and $\tau \rightarrow \bar{\Lambda}\pi$ (which violates both baryon and lepton number conservation) using data samples up to 424 fb^{-1} . We also present Belle searches for the charged lepton-flavor-violating (CLFV) decays $B_s \rightarrow \ell\tau$ and $\Upsilon(2S) \rightarrow \ell\tau$. We present searches for the baryon and lepton number violating decays $D \rightarrow p\ell$ by analyzing 921 fb^{-1} of data collected by Belle at and 60 MeV below the $\Upsilon(4S)$ resonance, and at the $\Upsilon(5S)$ resonance. Finally, we present a search for $B^0 \rightarrow K_S^0\tau\ell$ using a combined Belle and Belle II data set.

Working Group

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