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Measurements of semileptonic and leptonic B decays at Belle and Belle II

The Belle and Belle II experiments have collected a combined sample of 1.2 ab^{-1} of $e^+e^- \to B\bar{B}$ collisions at a centre-of-mass energy corresponding to the $\Upsilon(4S)$ resonance. These data, with low particle multiplicity and constrained initial state kinematics, are an ideal environment for studying semileptonic and leptonic decays of the B meson. Combined with theoretical inputs, measurements of both inclusive and exclusive semileptonic decays yield information about the Cabibbo-Kobayashi-Maskawa matrix elements V_{cb} and V_{ub}. Our latest results based on the Belle II data set are reviewed. We also present the first measurement of $B^+ \to \tau^+\nu$ from Belle II and a search for $B^+ \to \mu^+\nu$ using the combined Belle and Belle˜II samples. These decays provide constraints on beyond-the-standard model physics and provide alternative measurements of V_{ub} that complement those from semileptonic decay.

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