

Abstract Submitted
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Measurement of $B \rightarrow X_c l \nu$ branching fractions using Belle data¹

FRANK MEIER, Duke University — Semileptonic decays of B mesons are an important tool for precision measurements of Cabibbo-Kobayashi-Maskawa matrix elements and precision tests of the electroweak sector of the standard model. For the $B \rightarrow X_c l \nu$ branching fraction there is a significant gap between the inclusive measurement and the sum of the measurements of the exclusive channels. The dominant contributions $B \rightarrow D^* l \nu$ and $B \rightarrow D l \nu$ are precisely known but the branching fractions of $B \rightarrow D^{**} l \nu$ have higher uncertainties. Here, the D^{**} is an orbitally excited charmed meson, which can decay into $D^* \pi$ and $D \pi$. The decay $B \rightarrow D^{(*)} \pi \pi l \nu$ with two bachelor pions in the final state has so far even only been observed by the Babar collaboration. Over the course of about 10 years the Belle collaboration has recorded about 772 million $B\bar{B}$ pairs produced in $e^+e^- \rightarrow \Upsilon(4S)$ at the KEKB asymmetric-energy e^+e^- collider. The status of the measurement of the branching fraction of $B \rightarrow D^{(*)} \pi l \nu$ as well as $B \rightarrow D^{(*)} \pi \pi l \nu$ using the full Belle data sample will be presented including an analysis of the invariant $D^{(*)} \pi$ mass distribution.

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