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Search for New Physics with semi-leptonic B Decays at Belle

Thursday, August 8, 2019 9:15 AM (12 minutes)

Summary

Semi-leptonic B decays $B \rightarrow D() \tau \nu$ have been of interest because of the high sensitivity to the New Physics. Recent indication of a discrepancy of $R(D)$ and $R(D^*)$ (branching ratio of $B \rightarrow D() \tau \nu$ over $B \rightarrow D() l \nu$ where $l = e, \mu$) from the Standard Model prediction can be a hint for the New Physics effect.

In this talk, the new measurement of $R(D)$ and $R(D^*)$ based on semileptonically tagged $B \rightarrow D^* \tau \nu$ decays as well as the first measurement of the D^* polarization in $B \rightarrow D^* \tau \nu$ decays are presented.

This talk also covers new Belle search for the purely leptonic decay $B \rightarrow \mu^+ \nu$.

The analyses are based on the full data set recorded by the Belle detector at the KEKB $e^+ e^-$ collider containing 772 million $B\bar{B}$ pair events.

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