Contribution ID: **911** Type: **Parallel Talk**

New results on rare B decays with leptons from Belle

Thursday, July 6, 2017 3:45 PM (30 minutes)

Rare B decays with leptons in the final state are powerful probes to search for physics beyond the Standard Model (SM) as they can be calculated in the SM with high precision. We report recent results on rare B decays with leptons from the Belle experiment at the KEKB e^+e^- collider. The $B \to D^*\tau^+\nu$ mode is sensitive to New Physics effects such as a charged Higgs or leptoquark current, while the world average of the branching ratio shows a discrepancy from the SM. Recently, Belle has performed a measurement of this mode using τ^+ decays to hadronic final states, which is essentially independent of previous measurements from Belle. With this method, the τ lepton polarization in $B \to D^*\tau^+\nu$ has been measured for the first time. In addition, we study the D^* polarization in $B \to D^*\tau^+\nu$ by analyzing the D^* helicity angle distributions. Exploiting the unique features of e^+e^- B-factories, Belle can also study inclusive $B \to X_c\tau^+\nu$ decays. Recent results on purely leptonic decay, $B \to \mu^+\nu$ will also be discussed. The analyses are based on the full data set of Belle containing 772 million $B\bar{B}$ pairs.

Experimental Collaboration

Belle

Presenter: FALKE, Saskia (Centre National de la Recherche Scientifique (FR))

Session Classification: Flavour and symmetries

Track Classification: Flavour Physics and Fundamental Symmetries