



Contribution ID: 308

Type: parallel talk

## Tau properties in B decays from final-state kinematics

Tuesday, 9 May 2017 15:00 (15 minutes)

The semileptonic decays  $B \rightarrow D^{(*)}\tau\nu$  have received lots of attention recently, due to an observed discrepancy between standard-model predictions and measurements. Experimentally, these processes are challenging due to the fast decay of the tau lepton, which is indirectly observed through its decay products. From a theory perspective, the tau lepton is exactly what makes  $B \rightarrow D^{(*)}\tau\nu$  decays interesting: The massive lepton offers the possibility to study its polarization states individually and thereby learn about the details of its production. I will show how to obtain tau properties directly from kinematics of the visible decay products in  $\tau \rightarrow \pi\nu$ ,  $\tau \rightarrow \rho\nu$ , and  $\tau \rightarrow \ell\nu\bar{\nu}$  decays. These new observables provide us with an analytical framework to fully explore the properties of  $B \rightarrow D^{(*)}\tau\nu$  at BELLE II.

### Summary

**Primary authors:** WESTHOFF, Susanne (Heidelberg University); MARTIN CAMALICH, Jorge (CERN); ALONSO DE PABLO, Rodrigo (CERN)

**Presenter:** WESTHOFF, Susanne (Heidelberg University)

**Session Classification:** Heavy Flavor