



Contribution ID : 419

Type : Oral presentation

## Measurements of electroweak properties of $\tau$ lepton at the Belle experiment

*Saturday, 5 July 2014 15:30 (15)*

We present preliminary result of the measurement of Michel parameters in leptonic  $\tau$  decays and search for the Electric Dipole Moment of the  $\tau$  lepton using the world-largest  $\tau$  data sample collected by the Belle detector at the KEKB collider. Michel parameters are extracted from ( $\tau^\mp \rightarrow \ell^\mp \nu \nu$ ,  $\tau^\pm \rightarrow \pi^\pm \pi^0 \nu$ ) and ( $\tau^\mp \rightarrow \pi^\mp \pi^0 \nu$ ,  $\tau^\pm \rightarrow \pi^\pm \pi^0 \nu$ ) events in Belle's full  $\tau$  data sample, where  $\tau^\pm \rightarrow \pi^\pm \pi^0 \nu$  is used as a spin analyzer since  $\tau$  spin information is necessary to evaluate Michel parameters. The Electric Dipole Moment of the  $\tau$  lepton is one of the fundamental parameters and useful to discuss the new physics as a signal of it through CP violating loop effect. We have analyzed  $\tau^+ \tau^- \gamma$  vertex effect from the  $e^+ e^- \rightarrow \tau^+ \tau^-$  reaction in Belle's full  $\tau$  data sample which is about 30 times larger than that used at the previous measurement.

### Summary

**Primary author(s)** : Prof. KWON, Youngjoon (Yonsei University)

**Presenter(s)** : Dr. HAYASHII, Hisaki (Nara Women's University)

**Session Classification** : Top-quark and ElectroWeak Physics

**Track Classification** : Top-quark and ElectroWeak Physics