



Contribution ID : 128

Type : Oral presentation

## A new way to search for right-handed currents in semileptonic $B \rightarrow \rho \ell \bar{\nu}$ decay

*Saturday, 5 July 2014 13:00 (15)*

There exist a long standing tension among determinations of the CKM matrix element  $|V_{ub}|$  from various (semi)leptonic  $B$  decay channels with varying significance of up to  $\sim 3\sigma$ . An interesting possibility to ease this tension is to allow for a right-handed contribution to the standard model left-handed weak current mediating the  $b \rightarrow u$  quark decay. The current bounds on such a contribution are fairly weak. We propose a new way to search for such a right-handed current in semileptonic  $B$  meson decay to  $\rho$  mesons. We describe a new variable that we propose, and discuss the theoretical uncertainties. Especially we investigate the uncertainties and their correlations among all contributing form factors with the assumed  $z$ -expansion for its shape, valid over the whole  $q^2$  range. Then we study the achievable sensitivity both from the available Babar and Belle data sets, as well as from an anticipated  $50 \text{ ab}^{-1}$  at Belle-II.

### Summary

**Primary author(s) :** Mr. BERNLOCHNER, Florian (Humboldt University Berlin); Mr. TURCZYK, Sascha (University of Mainz); Mr. LIGETI, Zoltan (Lawrence Berkeley National Laboratory)

**Presenter(s) :** Mr. TURCZYK, Sascha (University of Mainz)

**Session Classification :** Flavour Physics

**Track Classification :** Flavour Physics