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Quest for New Physics with CKM elements

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The CKM elements $|V_{ub}|$ and $|V_{cb}|$ show a discrepancy between the exclusive and inclusive determinations. These determinations are masked with hadronic and other uncertainties, and thus can't be unambiguously taken as implying new physics. In this talk, we consider a new observable: the ratio of these two CKM elements, $R_V \frac{|V_{ub}|}{|V_{cb}|}$, which is found to receive negligible corrections due to hadronic as well as QED effects. It is observed that the R_V as constructed from exclusive determinations of $|V_{ub}|$ and $|V_{cb}|$ agrees quite well with that constructed from the inclusive determinations of these CKM elements. Hence, we show that R_V is a cleaner observable, and can serve as an excellent tool for the test of the Standard Model.

Session

Quark and Lepton Flavour Physics

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