

Combining $R(D^{(*)})$ measurements at Belle II

Tuesday, September 24, 2024 2:30 PM (30 minutes)

The $R(D^{(*)})$ ratio is an excellent test of Lepton Flavor Universality, that promises to elucidate the nature of potential Beyond the Standard Model physical processes. In this talk, we present the latest $R(D^{(*)})$ measurements from the Belle II experiment. Additionally, we explore a likelihood based combination of different analyses relying on orthogonal selections, that goes beyond the combination methodology of HFLAV. We discuss a list of joint systematic uncertainties, that should be decomposed in eigenvariations, relevant for such combinations. We demonstrate a combination using different MC mock analyses implementing the procedure. We also highlight a python based tool that can be used for eigendecompositions of non-trivial systematic uncertainties.

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