

Contribution ID: 750

Type: not specified

Tests of Lepton Flavor Universality in tree-level B Meson Decays at LHCb

Thursday 16 May 2024 15:00 (15 minutes)

Evidence for an excess of b -> c tau nu decays, indicative of a violation of Lepton Flavor Universality (LFU), was first experimentally observed in a 2012 analysis at BaBar measuring the ratio quantities $R(D()) = BF(B \rightarrow D() \tan nu) / BF(B \rightarrow D() l nu) (l=mu,e)$. More results followed from the B factories supporting this anomaly, and were later joined by LHCb, which boasts a larger production rate of B mesons (including Lambdas and Bc), along with a unique set of challenges. Representing one of the most compelling standing tensions with the SM, with R(D()) currently sitting above 3sigma, the program of LFU measurements has only continued to expand. In this talk, I'll review recent LHCb results, focusing on R(D()), including three results in the past year: a Run 2 simultaneous measurement of R(D(,+)) with the tau decaying hadronically, and a Run 1 simultaneous measurement of R(D(0)) with the muonic tau decay. I'll also briefly expand to mention other LFU measurements, including the combined Run 1+2 measurement of the longitudinal polarization of the Din B -> D tau nu, and future Run 2 measurements of the complementary R(J/psi) and of angular observables in B -> D* tau nu that can further constrain new physics models.

Mini Symposia (Invited Talks Only)

Plenary (Invited talks only)

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Track Classification: Quark and Lepton Flavor Physics