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[307] Test of lepton flavour universality in $B^+ \rightarrow K^+ l^+ l^-$ decays in high dilepton invariant mass squared region

Tuesday 31 August 2021 15:00 (15 minutes)

The recently updated value of the ratio of branching fractions $R_K = \mathcal{B}(B^+ \to K^+ \mu^+ \mu^-) / \mathcal{B}(B^+ \to K^+ e^+ e^-)$ that has been calculated for a dilepton invariant mass squared range $q^2 \in (1.1 \text{ GeV}^2, 6.0 \text{ GeV}^2)$ is in tension with the Standard Model prediction at the level of 3.1σ . I will discuss a complementary study in the high $q^2 > 14 \text{ GeV}^2$ region using the same 9 fm^{-1} of proton-proton collision data recorded by the LHCb experiment at CERN's Large Hadron Collider. The result is expected to be statistically and systematically independent of the existing central q^2 measurement and will be a vital measurement in clarifying the presence of new physics in this system.

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