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Questioning New Physics in Rare Semileptonic B, D, and K decays

Tuesday 28 June 2022 14:30 (30 minutes)

We investigate the consequences of deviations from the Standard Model observed in b⟶sμμ transitions for flavour-changing neutral-current processes involving down-type quarks and neutrinos. We derive the relevant Wilson coefficients within an effective field theory approach respecting the SM gauge symmetry, including right-handed currents, a flavour structure based on approximate U(2) symmetry, and assuming only SM-like light neutrinos. We discuss correlations among B⟶K(∗)νν and K⟶πνν branching ratios.
Assuming that NP has a CP-violating phase, we search for the observables which can test it. Then we discuss the correlation of New Physics in D⟶πll, D⟶πνν, K⟶πνν and K⟶π ll decays.

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