

Exclusive hadronic tau decays as probes of non-SM interactions

Content

We perform a global analysis of exclusive hadronic tau decays into one and two mesons using the low-energy limit of the Standard Model Effective Field Theory up to dimension six, assuming left-handed neutrinos. A controlled theoretical input on the Standard Model hadronic form factors, based on chiral symmetry, dispersion relations, data and asymptotic QCD properties, has allowed us to set bounds on the New Physics effective couplings using the present experimental data. Our results highlight the importance of semileptonic τ decays in complementing the traditional low-energy probes, such nuclear β decays or semileptonic pion and kaon decays, and the high-energy measurements at LHC scales. This makes yet another reason for considering hadronic tau decays as golden modes at Belle-II.

Summary

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