

Exclusive hadronic tau decays as probes of non-SM interactions

Content

In this work 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 considering operators up to dimension six and assuming left-handed neutrinos. All hadron form factors are constructed exploiting chiral symmetry, dispersion relations and lattice data. Following this EFT framework we have set bounds on New Physics effective couplings. Our results highlight the importance of semileptonic tau decays in complementing the traditional low-energy probes, such as nuclear beta decays or semileptonic pion and kaon decays, and the high energy measurements at LHC scales. This makes yet another reason for considering tau decays as golden modes at Belle-II.

Primary author(s) : Mr. RENDON, Javier (Cinvestav)

Presenter(s) : Mr. RENDON, Javier (Cinvestav)

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