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Semileptonic tau decays beyond the Standard Model

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Hadronic τ decays are studied as probe of new physics. We determine the dependence of several inclusive and exclusive τ observables on the Wilson coefficients of the low-energy effective theory describing charged-current interactions between light quarks and leptons. The analysis includes both strange and non-strange decay channels. The main result is the likelihood function for the Wilson coefficients in the tau sector, based on the up-to-date experimental measurements and state-of-the-art theoretical techniques. The likelihood can be readily combined with inputs from other low-energy precision observables. We discuss a combination with nuclear beta, baryon, pion, and kaon decay data. In particular, we provide a comprehensive and model-independent description of the new physics hints in the combined dataset, which are known under the name of the Cabibbo anomaly.

In-person participation

Yes

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