

Deriving experimental constraints on the scalar form factor in the second-class $\tau \rightarrow \eta\pi\nu$ mode

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The rare second-class decay mode of the τ into $\eta\pi\nu$ could be observed for the first time at Belle II. It is important to try to derive a reliable evaluation of the branching fraction and of the energy distribution of this mode within the standard-model. Many predictions exist already in the literature which, unfortunately, can differ by one to two orders of magnitude. In this talk I discuss an approach based on a systematic use of the property of analyticity (of form factors and amplitudes) in QCD. In particular, I will show that the scalar form factor in the τ decay can be related to photon-photon scattering and radiative ϕ decay amplitudes for which precise experimental measurements (by Belle and Kloe) exist.

What is your topic?

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