



Contribution ID: 155

Type: **Talk**

Real radiative decays of heavy pseudoscalar mesons

Thursday 6 November 2025 14:50 (20 minutes)

The unitarity of the CKM matrix is a fundamental property of the Standard Model, and leptonic decays of pseudoscalar mesons $P \rightarrow \ell \nu(\gamma)$ are an important avenue to probe this experimentally. The theoretical prediction of the decay rate depends on a number of form factors, which can be calculated using lattice QCD. We present an approach to compute them using a JLQCD domain-wall fermion ensemble with $m_\pi = 284$ MeV and $a = 0.044$ fm. We focus on the radiative decay $P \rightarrow \ell \nu \gamma$, where the photon is on-shell and P is either a D , a D_s or a B . The determination of the corresponding vector and axial form factors F_V and F_A give access to $|V_{cd}|$, $|V_{cs}|$, and $|V_{ub}|$.

Parallel Session (for talks only)

Quark and lepton flavor physics

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Session Classification: Quark and lepton flavor physics