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Comparing phenomenological estimates of dilepton decays of pseudoscalar mesons with lattice QCD

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Dilepton decays of the pseudoscalar mesons have been drawing particular interest, thanks to their sensitivity to both the QCD dynamics at low energy and also signals beyond the Standard model. In the first part of the talk, we present our work on an improved Standard-Model prediction for the rare decay $\pi^0 \rightarrow e^+e^-$, and compare it with the first determination on the lattice that predicted a lower $\pi^0 \rightarrow \gamma\gamma$ decay width as byproduct. In the second part, we discuss the ongoing work on $K_L \rightarrow \ell^+\ell^-$ decays and its connection to lattice QCD.

Topical area

Quark and Lepton Flavor Physics

Primary author: HOID, Bai-Long (University of Bern)**Co-authors:** HOFERICHTER, Martin (University of Bern); RUIZ DE ELVIRA, Jacobo**Presenter:** HOID, Bai-Long (University of Bern)**Session Classification:** Quark and Lepton Flavor Physics