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## **BSM Sensitivity of Rare Kaon Decays**

Rare kaon decays offer a sensitive window into short-distance physics and potential signals of physics beyond the Standard Model (BSM). This work focuses on several key decay modes—namely  $K^+ \rightarrow \pi^+ \nu \bar{\nu}$ ,  $K_L \rightarrow \pi^0 \nu \bar{\nu}$ , and  $K_L \rightarrow \pi^0 \ell^+ \ell^-$ —highlighting how new physics scenarios can influence their behavior. We perform a global analysis of current rare kaon decay data and present projections informed by potential future experimental results from CERN and KOTO-II. These results demonstrate the important role of kaon observables in probing short-distance effects and guiding the search for BSM signatures.

## Secondary track

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