

# TFPT Prediction: Rare-Kaon Corridor from the Closed CKM Point

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Standalone prediction note – April 27, 2026

## Abstract

This note isolates the rare-kaon corridor. It follows the closed CKM point into standard short-distance rare-kaon amplitudes and is compared against NA62/KOTO-style channels.

### Prediction scope and audit

**Target.**  $\text{BR}(K^+) = 9.40 \times 10^{-11}$ ,  $\text{BR}(K_L) = 3.47 \times 10^{-11}$

**Status.** Comparison quantity; flavor readout through short-distance amplitudes.

**Dependency class.** flavor readout  $F_{\text{fl}}$

**Kill or pressure test.**  $K^+$  outside  $[7, 12] \times 10^{-11}$  or incompatible Grossman–Nir-plane correlation.

## 1 Standalone Minimal Kernel

### Minimal TFPT kernel used in this prediction

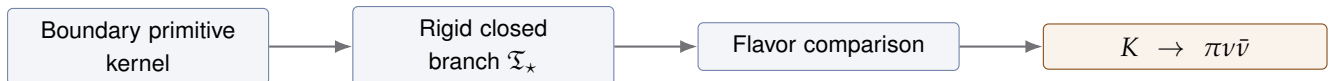
The standalone input package is the boundary-polarized closed branch

$$\mathfrak{S}_{\min} \Rightarrow \mathcal{B}_{\min} \Rightarrow \mathfrak{F}_0^{\min} \Rightarrow (\tau_{\text{dbl}}, \iota_C, P_{\text{prim}}, [u_\Sigma], c_3) \Rightarrow d_{\text{disc}}^* \Rightarrow P_{\text{adm}} \Rightarrow \mathfrak{F}_*$$

The prediction uses only the sector map named in its audit box. Numerical comparison conventions are not theorem inputs; they enter only at the final interface row.

The paper is intentionally one-row: it does not reprove the full TFPT series. It states the minimal closed-branch input needed for this prediction, shows the sector map, and gives the direct failure mode. The source status follows the TFPT 4.5 split: boundary and carrier inputs are core, electromagnetic/flavor/metrology inputs are bridge readouts, QFT closure is conditional, and cosmology rows are downstream comparison targets when explicitly marked.

## 2 Dependency Graph



corridor failure

Closed CKM point enters the short-distance kaon amplitudes.

### 3 Derivation

The flavor sector fixes a closed CKM point. The rare-kaon comparison row then evaluates the short-distance amplitudes at that point:

$$\text{BR}(K^+ \rightarrow \pi^+ \nu \bar{\nu}) = 9.40 \times 10^{-11},$$

$$\text{BR}(K_L \rightarrow \pi^0 \nu \bar{\nu}) = 3.47 \times 10^{-11}.$$

The current charged-channel reading quoted in the ledger is compatible with the target corridor, while the neutral channel remains open.

### 4 No-Knobs and Failure Surface

#### No-knobs audit

This row is not a theorem-level Standard-Model proof; it is a flavor-comparison target. A stable  $K^+$  value outside  $[7, 12] \times 10^{-11}$  or a GN-plane mismatch would break the present flavor bridge.

### 5 Minimal Submission Claim

The standalone claim is limited to the displayed target and dependency class. It does not assert that every comparison row of the full TFPT ledger has the same proof status. Any update of the upstream boundary kernel, carrier theorem, or sector map must be propagated into this prediction before the numerical row is distributed.

### References

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