TFPT Prediction: Cabibbo Angle from the Retained Flavor Branch

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Standalone prediction note – April 27, 2026

Abstract

This note isolates the Cabibbo-angle prediction as a flavor-sector readout. The UV seed identity is retained as an exact shadow, but the physical observable is assigned to the flavor closure map.

Prediction scope and audit

Target. $\lambda_C = 0.22438$
Status. Physical observable; flavor readout from hard holonomy closure.
Dependency class. flavor readout F_{fl}
Kill or pressure test. stable CKM global-fit mismatch after the declared comparison map.

1 Standalone Minimal Kernel

Minimal TFPT kernel used in this prediction

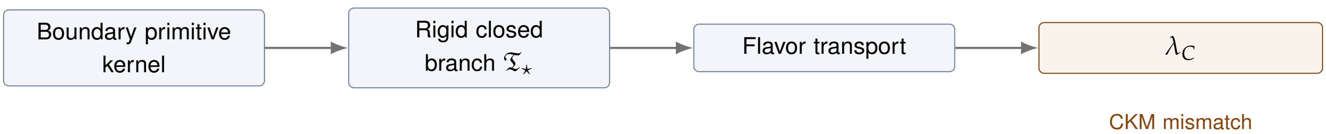
The standalone input package is the boundary-polarized closed branch

$$\mathfrak{S}_{\mathrm{min}} \Rightarrow \mathcal{B}_{\mathrm{min}} \Rightarrow \mathfrak{T}_{\partial}^{\mathrm{min}} \Rightarrow (\tau_{\mathrm{dbl}}, \iota_{\mathrm{C}}, P_{\mathrm{prim}}, [u_{\Sigma}], c_3) \Rightarrow d^{\star}_{\mathrm{disc}} \Rightarrow P_{\mathrm{adm}} \Rightarrow \mathfrak{T}_{\star}.$$

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



The retained seed appears only as UV bookkeeping; the physical row factors through flavor closure.

3 Derivation

On the retained UV bookkeeping layer the seed obeys

$$\lambda_C = \sqrt{\varphi_0^{\rm ret}(1-\varphi_0^{\rm ret})}, \qquad \varphi_0^{\rm ret} = \frac{1}{6\pi} + \frac{3}{256\pi^4}.$$

Equivalently, the Cabibbo inversion is

$$\varphi_0^{\rm ret} = \frac{1-\sqrt{1-4\lambda_C^2}}{2}.$$

In the physical observable layer this identity is not treated as an independent seed quartet. The row factors through the flavor map

$$\mathfrak{T}_\star \longmapsto F_{\rm fl}(\mathfrak{T}_\star) \longmapsto s_{12}(V_{\rm CKM}^\star) = \lambda_C.$$

The numerical target used in the prediction ledger is

$$\lambda_C = 0.22438,$$

compared to the CKM physical angle representative.

4 No-Knobs and Failure Surface

No-knobs audit

Do not count λ_C, $\beta_{\rm rad}$, Ω_b, and θ_{13} as one operational class. λ_C is the flavor member of the sectorized seed shadow.

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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