TFPT Prediction: Strong-CP Closure and the Neutron-EDM Null Test

Stefan Hamann Alessandro Rizzo

Standalone prediction note – April 27, 2026

Abstract

This note isolates the strong-CP prediction as a theorem-level null row. It is a consequence of determinant-line closure and admissibility, not a tunable flavor-sector phase.

Prediction scope and audit

Target. $\theta_{\mathrm{eff}} = 0$
Status. Theorem-level null prediction on the admissible branch.
Dependency class. strong-CP closure C_{CP}
Kill or pressure test. stable nonzero hadronic EDM signal.

1 Standalone Minimal Kernel

Minimal TFPT kernel used in this prediction

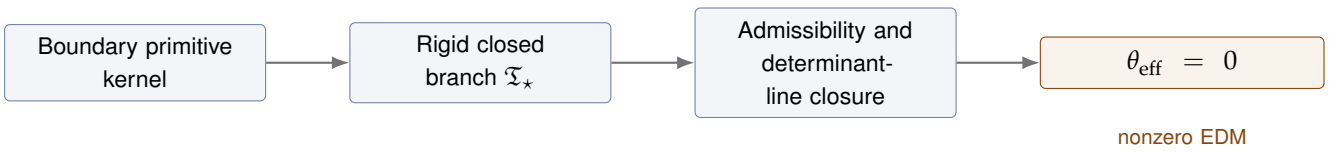
The standalone input package is the boundary-polarized closed branch

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

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



Strong CP belongs to admissibility/QFT closure, not to the flavor paper.

3 Derivation

On the admissible branch the determinant-line closure gives

$$\arg\det M_u = \arg\det M_d = 0.$$

Together with the admissible topological-sector positivity and sheet symmetry, the effective strong angle is

$$\theta_{\mathrm{eff}} = 0.$$

The physical null row is therefore

$$\bar{\theta} = 0, \qquad F(\theta) > F(0) \quad \text{for} \quad \theta \not\equiv 0 \bmod 2\pi.$$

The experimental pressure point is the hadronic EDM program.

4 No-Knobs and Failure Surface

No-knobs audit

A stable nonzero hadronic EDM signal would break the present determinant-line strong-CP closure rather than merely shift a fit parameter.

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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