TFPT in Two Pages

Boundary polarization, carrier rigidity, and testable readouts

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One-sentence claim

TFPT claims that a one-sided boundary datum canonically fixes a primitive kernel, a rigid $3+2$ carrier packet, an admissible physical sector, and a closed branch $\mathfrak{T}_\star$ whose observable readouts are then compared through explicit sector maps rather than fitted one by one.

Minimal Chain

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

The three decoders keep the theory readable:

Y generates structure, $[u_\Sigma] = 1$ generates counting, $u = \varphi_0^{\mathrm{ret}}$ is only a UV shadow after sectorization.

The carrier theorem fixes

$$6Y^2 - Y - \mathbf{1} = 0, \quad \mathrm{Tr}_E\, Y = 0 \quad \Rightarrow \quad E = E_3 \oplus E_2, \quad Y = \mathrm{diag}(-1/3, -1/3, -1/3, 1/2, 1/2),$$

and hence

$$G_{\mathrm{phys}} = \frac{SU(3) \times SU(2) \times U(1)_Y}{\mathbb{Z}_6}, \qquad S^+ = \Lambda^{\mathrm{even}} E, \qquad N_{\mathrm{fam}} = 3, \quad \Omega_{\mathrm{adm}} = 48, \quad N_\Phi = 1.$$

Status Discipline

Layer	Status	Role
Boundary kernel	Core theorem	Builds $(\tau_{\mathrm{dbl}}, \iota_C, P_{\mathrm{prim}}, [u_\Sigma], c_3)$ from $\mathfrak{T}_\partial^{\min}$.
Carrier packet	Core theorem	Generates the Standard-Model-like representation packet.
EM/flavor	Bridge/readout	Fixes α, CKM, PMNS, and sectorized seed shadows.
QFT/strong CP	Conditional closure	Uses stated admissibility, positivity, and gap hypotheses.
Metrology	Bridge	Reads $G_N \lambda_\Sigma^2$, $\bar{M}_{\mathrm{Pl}}/\lambda_\Sigma$, and EW ratios.
Cosmology	Downstream target	Stage 1 CMB spectra and Stage 2 sky realization remain status-separated.

Prediction Surface

Row	Target	Dependency class	Kill/pressure criterion
$\alpha^{-1}(0)$	137.0359992168 . . .	exact EM closure	failure of the self-consistent root.
λ_C	0.22438	flavor readout	stable CKM mismatch.
$\sin^2\theta_{13}$	0.02311	neutrino closure	robust NO global-fit exclusion.
β	0.2424°	determinant response	calibrated $\beta = 0$ within $\pm 0.05°$.
Strong CP	$\theta_{\rm eff} = 0$	admissibility closure	stable nonzero hadronic EDM.
Rare kaons	$K^+ = 9.40\times10^{-11}$, $K_L = 3.47\times10^{-11}$	flavor comparison	outside corridor/GN-plane mismatch.
PMNS phase/octant	$\delta_{\rm CP} = 240°$, $\sin^2\theta_{23} = 0.4557$	neutrino readout	3σ exclusion.
Σm_ν	5.8764×10^{-2} eV	neutrino readout	robust bound below branch value.
$m_{\beta\beta}$	1.516×10^{-3} eV	Majorana branch	detection implying $\gtrsim 10^{-2}$ eV.
Axion window	$m_a \simeq 65.19\,\mu$eV, $\nu_a \simeq 15.764$ GHz	cosmology readout	exclusion in the coupled window.
η_B	5.97×10^{-10}	leptogenesis comparison	robust exclusion of branch value.
Second Higgs	no extra light seam-even doublet	bosonic index	robust discovery of a second light doublet.

What This Is Not

The prediction papers do not treat every row as the same kind of truth. Some are theorem-level null tests, some are physical observables, some are scheme projections, and some are downstream comparison targets. Each standalone prediction paper states its dependency class and kill criterion before giving the formula chain.