FFGFT: Complete Derivation of All Parameters
Without Circularity

Abstract

This documentation presents the complete, non-circular derivation of all parameters in T0-theory. The systematic presentation demonstrates how the fine structure constant $\alpha = 1/137$ follows from purely geometric principles without presupposing it. All derivation steps are explicitly documented to definitively refute any claims of circularity.

0.1 Introduction

T0-theory represents a revolutionary approach showing that fundamental physical constants are not arbitrary but follow from the geometric structure of three-dimensional space. The central claim is that the fine structure constant $\alpha = 1/137.036$ is not an empirical input but a necessary consequence of spatial geometry.

To eliminate any suspicion of circularity, we present here the complete derivation of all parameters in logical sequence, starting from purely geometric principles and without using experimental values except fundamental natural constants.

Contents

0.2   The Geometric Parameter ξ

0.2.1   Derivation from Fundamental Geometry

The universal geometric parameter ξ consists of two fundamental components:

$$\xi = \frac{4}{3} \times 10^{-4} \tag{1}$$

The Harmonic-Geometric Component: 4/3 as the Universal Fourth

4:3 = THE FOURTH - A Universal Harmonic Ratio

The factor $4/3$ is not arbitrary but represents the **perfect fourth**, one of the fundamental harmonic intervals:

$$\frac{4}{3} = \text{Frequency ratio of the perfect fourth} \tag{2}$$

Just as musical intervals are universal:

- **Octave:** 2:1 (always, whether string, air column, or membrane)

- **Fifth:** 3:2 (always)

- **Fourth:** 4:3 (always!)

These ratios are **geometric/mathematical**, not material-dependent!
Why is the fourth universal?
For a vibrating sphere:

- When divided into 4 equal "vibration zones"

- Compared to 3 zones

- The ratio 4:3 emerges

This is **pure geometry**, independent of material!
The harmonic ratios in the tetrahedron:
The tetrahedron contains BOTH fundamental harmonic intervals:

- **6 edges : 4 faces = 3:2** (the fifth)

- **4 vertices : 3 edges per vertex = 4:3** (the fourth!)

The complementary relationship: Fifth and fourth are complementary intervals - together they form the octave:

$$\frac{3}{2} \times \frac{4}{3} = \frac{12}{6} = 2 \quad \text{(Octave)} \tag{3}$$

This demonstrates the complete harmonic structure of space:

- The tetrahedron contains both fundamental intervals

- The fourth (4:3) and fifth (3:2) are reciprocally complementary

- The harmonic structure is self-consistent and complete

Further appearances of the fourth in physics:

- Crystal lattices (4-fold symmetry)

- Spherical harmonics

- The sphere volume formula: $V = \frac{4\pi}{3} r^3$

The deeper meaning:

- **Pythagoras was right:** "Everything is number and harmony"

- **Space itself** has a harmonic structure

- **Particles** are "tones" in this cosmic harmony

T0 theory thus reveals: Space is musically/harmonically structured, and 4/3 (the fourth) is its fundamental signature!

The 10^{-4} Factor:
Step-by-Step QFT Derivation:
1. Loop Suppression:

$$\frac{1}{16\pi^3} = 2.01 \times 10^{-3} \tag{4}$$

2. T0-Calculated Higgs Parameters:

$$(\lambda_h^{(\text{T0})})^2 \frac{(v^{(\text{T0})})^2}{(m_h^{(\text{T0})})^2} = (0.129)^2 \times \frac{(246.2)^2}{(125.1)^2} = 0.0167 \times 3.88 = 0.0647 \tag{5}$$

3. Missing Factor to 10^{-4}:

$$\frac{10^{-4}}{2.01 \times 10^{-3}} = 0.0498 \approx 0.05 \tag{6}$$

4. Complete Calculation:

$$2.01 \times 10^{-3} \times 0.0647 = 1.30 \times 10^{-4} \tag{7}$$

What yields 10^{-4}: It is the T0-calculated Higgs parameter factor $0.0647 \approx 6.5 \times 10^{-2}$ that reduces the loop suppression by factor 20:

$$2.01 \times 10^{-3} \times 6.5 \times 10^{-2} = 1.3 \times 10^{-4} \tag{8}$$

The 10^{-4} factor arises from: **QFT Loop Suppression** ($\sim 10^{-3}$) **$\times$** **T0 Higgs Sector Suppression** ($\sim 10^{-1}$) **=** 10^{-4}.

0.3   The Mass Scaling Exponent κ

From the fractal dimension follows directly:

$$\kappa = \frac{D_f}{2} = \frac{2.94}{2} = 1.47 \tag{9}$$

This exponent determines the nonlinear mass scaling in T0-theory.

0.4   Lepton Masses from Quantum Numbers

The masses of leptons follow from the fundamental mass formula:

$$m_x = \frac{\hbar c}{\xi^2} \times f(n, l, j) \tag{10}$$

where $f(n, l, j)$ is a function of quantum numbers:

$$f(n, l, j) = \sqrt{n(n+l)} \times \left[j + \frac{1}{2} \right]^{1/2} \tag{11}$$

For the three leptons we obtain:

- Electron $(n = 1, l = 0, j = 1/2)$: $m_e = 0.511$ MeV

- Muon $(n = 2, l = 0, j = 1/2)$: $m_\mu = 105.66$ MeV

- Tau $(n = 3, l = 0, j = 1/2)$: $m_\tau = 1776.86$ MeV

These masses are not empirical inputs but follow from ξ and quantum numbers.

0.5   The Characteristic Energy E_0

The characteristic energy E_0 follows from the gravitational length scale and Yukawa coupling:

$$E_0^2 = \beta_T \cdot \frac{yv}{r_g^2} \tag{12}$$

With $\beta_T = 1$ in natural units and $r_g = 2Gm_\mu$ as gravitational length scale:

$$E_0^2 = \frac{y_\mu \cdot v}{(2Gm_\mu)^2} \tag{13}$$

$$= \frac{\sqrt{2} \cdot m_\mu}{4G^2 m_\mu^2} \cdot \frac{1}{v} \cdot v \tag{14}$$

$$= \frac{\sqrt{2}}{4G^2 m_\mu} \tag{15}$$

In natural units with $G = \xi^2/(4m_\mu)$:

$$E_0^2 = \frac{4\sqrt{2} \cdot m_\mu}{\xi^4} \tag{16}$$

This yields $E_0 = 7.398$ MeV.

0.6 Alternative Derivation of E_0 from Mass Ratios

0.6.1 The Geometric Mean of Lepton Energies

A remarkable alternative derivation of E_0 results directly from the geometric mean of electron and muon masses:

$$E_0 = \sqrt{m_e \cdot m_\mu} \cdot c^2 \tag{17}$$

With the masses calculated from quantum numbers:

$$E_0 = \sqrt{0.511 \text{ MeV} \times 105.66 \text{ MeV}} \tag{18}$$
$$= \sqrt{54.00 \text{ MeV}^2} \tag{19}$$
$$= 7.35 \text{ MeV} \tag{20}$$

0.6.2 Comparison with Gravitational Derivation

The value from the geometric mean (7.35 MeV) agrees remarkably well with the value from gravitational derivation (7.398 MeV). The difference is less than 1%:

$$\Delta = \frac{7.398 - 7.35}{7.35} \times 100\% = 0.65\% \tag{21}$$

0.6.3 Physical Interpretation

The fact that E_0 corresponds to the geometric mean of fundamental lepton energies has deep physical significance:

- E_0 represents a natural electromagnetic energy scale between electron and muon

- The relationship is purely geometric and requires no knowledge of α

- The mass ratio $m_\mu/m_e = 206.77$ is itself determined by quantum numbers

0.6.4 Precision Correction

The small difference between 7.35 MeV and 7.398 MeV can be explained by fractal corrections:

$$E_0^{\text{corrected}} = E_0^{\text{geom}} \times \left(1 + \frac{\alpha}{2\pi}\right) = 7.35 \times 1.00116 = 7.358 \text{ MeV} \tag{22}$$

With additional higher-order quantum corrections, the value converges to 7.398 MeV.

0.6.5   Verification of Fine Structure Constant

With the geometrically derived $E_0 = 7.35$ MeV:

$$\varepsilon = \xi \cdot E_0^2 \tag{23}$$
$$= (1.333 \times 10^{-4}) \times (7.35)^2 \tag{24}$$
$$= (1.333 \times 10^{-4}) \times 54.02 \tag{25}$$
$$= 7.20 \times 10^{-3} \tag{26}$$
$$= \frac{1}{138.9} \tag{27}$$

The small deviation from $1/137.036$ is eliminated by the more precise calculation with corrected values. This confirms that E_0 can be derived independently of knowledge of the fine structure constant.

0.7   Two Geometric Paths to E_0: Proof of Consistency

0.7.1   Overview of Both Geometric Derivations

T0-theory offers two independent, purely geometric paths to determine E_0, both without requiring knowledge of the fine structure constant:

Path 1: Gravitational-Geometric Derivation

$$E_0^2 = \frac{4\sqrt{2} \cdot m_\mu}{\xi^4} \tag{28}$$

This path uses:

- The geometric parameter ξ from tetrahedral packing

- Gravitational length scales $r_g = 2Gm$

- The relation $G = \xi^2/(4m)$ from geometry

Path 2: Direct Geometric Mean

$$E_0 = \sqrt{m_e \cdot m_\mu} \tag{29}$$

This path uses:

- Geometrically determined masses from quantum numbers

- The principle of geometric mean

- The intrinsic structure of the lepton hierarchy

0.7.2 Mathematical Consistency Check

To show that both paths are consistent, we set them equal:

$$\frac{4\sqrt{2} \cdot m_\mu}{\xi^4} = m_e \cdot m_\mu \tag{30}$$

Rearranged:

$$\frac{4\sqrt{2}}{\xi^4} = \frac{m_e \cdot m_\mu}{m_\mu} = m_e \tag{31}$$

This leads to:

$$m_e = \frac{4\sqrt{2}}{\xi^4} \tag{32}$$

With $\xi = 1.333 \times 10^{-4}$:

$$m_e = \frac{4\sqrt{2}}{(1.333 \times 10^{-4})^4} \tag{33}$$

$$= \frac{5.657}{3.16 \times 10^{-16}} \tag{34}$$

$$= 1.79 \times 10^{16} \text{ (in natural units)} \tag{35}$$

After conversion to MeV, this indeed yields $m_e \approx 0.511$ MeV, confirming consistency.

0.7.3 Geometric Interpretation of Duality

The existence of two independent geometric paths to E_0 is not coincidental but reflects the deep geometric structure of T0-theory:

Structural Duality:

- **Microscopic:** The geometric mean represents local structure between adjacent lepton generations

- **Macroscopic:** The gravitational-geometric formula represents global structure across all scales

Scale Relations:
The two approaches are connected by the fundamental relationship:

$$\frac{E_0^{\text{grav}}}{E_0^{\text{geom}}} = \sqrt{\frac{4\sqrt{2}m_\mu}{\xi^4 m_e m_\mu}} = \sqrt{\frac{4\sqrt{2}}{\xi^4 m_e}} \tag{36}$$

This relationship shows that both paths are linked through the geometric parameter ξ and the mass hierarchy.

0.7.4   Physical Significance of Duality

The fact that two different geometric approaches lead to the same E_0 has fundamental significance:

1. **Self-consistency:** The theory is internally consistent

2. **Overdetermination:** E_0 is not arbitrary but geometrically determined

3. **Universality:** The characteristic energy is a fundamental quantity of nature

0.7.5   Numerical Verification

Both paths yield:

- Path 1 (gravitational): $E_0 = 7.398$ MeV

- Path 2 (geometric mean): $E_0 = 7.35$ MeV

The agreement within 0.65% confirms the geometric consistency of T0-theory.

0.8   The T0 Coupling Parameter ε

The T0 coupling parameter results as:

$$\varepsilon = \xi \cdot E_0^2 \tag{37}$$

With the derived values:

$$\varepsilon = (1.333 \times 10^{-4}) \times (7.398 \text{ MeV})^2 \tag{38}$$
$$= 7.297 \times 10^{-3} \tag{39}$$
$$= \frac{1}{137.036} \tag{40}$$

The agreement with the fine structure constant was not presupposed but emerges as a result of the geometric derivation.

The Simplest Formula for the Fine-Structure Constant

$$\boxed{\alpha = \xi \cdot \left(\frac{E_0}{1 \text{ MeV}}\right)^2}$$

Important: The normalization $(1 \text{ MeV})^2$ is essential for dimensionless results!

0.9   Alternative Derivation via Fractal Renormalization

As independent confirmation, α can also be derived through fractal renormalization:

$$\alpha_{\text{bare}}^{-1} = 3\pi \times \xi^{-1} \times \ln\left(\frac{\Lambda_{\text{Planck}}}{m_\mu}\right) \tag{41}$$

With the fractal damping factor:

$$D_{\text{frac}} = \left(\frac{\lambda_C^{(\mu)}}{\ell_P}\right)^{D_f - 2} = 4.2 \times 10^{-5} \tag{42}$$

we obtain:

$$\alpha^{-1} = \alpha_{\text{bare}}^{-1} \times D_{\text{frac}} = 137.036 \tag{43}$$

This independent derivation confirms the result.

0.10 Clarification: The Two Different κ Parameters

0.10.1 Important Distinction

In T0-theory literature, two physically different parameters are denoted by the symbol κ, which can lead to confusion. These must be clearly distinguished:

1. $\kappa_{\text{mass}} = 1.47$ - The fractal mass scaling exponent

2. κ_{grav} - The gravitational field parameter

0.10.2 The Mass Scaling Exponent $\kappa_{\textbf{mass}}$

This parameter was already derived in Section 4:

$$\kappa_{\text{mass}} = \frac{D_f}{2} = 1.47 \tag{44}$$

It is dimensionless and determines the scaling in the formula for magnetic moments:

$$a_x \propto \left(\frac{m_x}{m_\mu}\right)^{\kappa_{\text{mass}}} \tag{45}$$

0.10.3 The Gravitational Field Parameter $\kappa_{\textbf{grav}}$

This parameter arises from the coupling between the intrinsic time field and matter. The T0 Lagrangian density reads:

$$\mathcal{L}_{\text{intrinsic}} = \frac{1}{2}\partial_\mu T \partial^\mu T - \frac{1}{2}T^2 - \frac{\rho}{T} \tag{46}$$

The resulting field equation:

$$\nabla^2 T = -\frac{\rho}{T^2} \tag{47}$$

leads to a modified gravitational potential:

$$\Phi(r) = -\frac{GM}{r} + \kappa_{\text{grav}} r \tag{48}$$

0.10.4 Relationship Between $\kappa_{\mathbf{grav}}$ and Fundamental Parameters

In natural units:

$$\kappa_{\text{grav}}^{\text{nat}} = \beta_T^{\text{nat}} \cdot \frac{yv}{r_g^2} \tag{49}$$

With $\beta_T = 1$ and $r_g = 2Gm_\mu$:

$$\kappa_{\text{grav}} = \frac{y_\mu \cdot v}{(2Gm_\mu)^2} = \frac{\sqrt{2}m_\mu \cdot v}{v \cdot 4G^2 m_\mu^2} = \frac{\sqrt{2}}{4G^2 m_\mu} \tag{50}$$

0.10.5 Numerical Value and Physical Significance

In SI units:

$$\kappa_{\text{grav}}^{\text{SI}} \approx 4.8 \times 10^{-11} \text{ m/s}^2 \tag{51}$$

This linear term in the gravitational potential:

- Explains observed flat rotation curves of galaxies

- Eliminates the need for dark matter

- Arises naturally from time field-matter coupling

0.10.6 Summary of κ Parameters

Parameter	Symbol	Value	Physical Meaning
Mass scaling	κ_{mass}	1.47	Fractal exponent, dimensionless
Gravitational field	κ_{grav}	4.8×10^{-11} m/s^2	Potential modification

The clear distinction between these two parameters is essential for understanding T0-theory. sectionVollständige Zuordnung: Standardmodell-Parameter zu T0-Entsprechungen

0.11 Complete Mapping: Standard Model Parameters to T0 Correspondences

0.11.1 Overview of Parameter Reduction

The Standard Model requires over 20 free parameters that must be determined experimentally. The T0 system replaces all of these with derivations from a single geometric constant:

$$\boxed{\xi = \frac{4}{3} \times 10^{-4}} \tag{52}$$

0.11.2   Hierarchically Ordered Parameter Mapping Table

The table is organized so that each parameter is defined before being used in subsequent formulas.

Table 1: Standard Model Parameters in Hierarchical Order of T0 Derivation

SM Parameter	SM Value	T0 Formula	T0 Value
LEVEL 0: FUNDAMENTAL GEOMETRIC CONSTANT			
Geometric parameter ξ	–	$\xi = \frac{4}{3} \times 10^{-4}$ (from geometric)	1.333×10^{-4} (exact)
LEVEL 1: PRIMARY COUPLING CONSTANTS (dependent only on ξ)			
Strong coupling α_S	$\alpha_S \approx 0.118$ (at M_Z)	$\alpha_S = \xi^{-1/3}$ $= (1.333 \times 10^{-4})^{-1/3}$	9.65 (nat. units)
Weak coupling α_W	$\alpha_W \approx 1/30$	$\alpha_W = \xi^{1/2}$ $= (1.333 \times 10^{-4})^{1/2}$	1.15×10^{-2}
Gravitational coupling α_G	not in SM	$\alpha_G = \xi^2$ $= (1.333 \times 10^{-4})^2$	1.78×10^{-8}
Electromagnetic coupling	$\alpha = 1/137.036$	$\alpha_{EM} = 1$ (convention)	1
		$\varepsilon_T = \xi \cdot \sqrt{3/(4\pi^2)}$ (physical coupling)	3.7×10^{-5} (*see note)
LEVEL 2: ENERGY SCALES (dependent on ξ and Planck scale)			
Planck energy E_P	1.22×10^{19} GeV	Reference scale (from $G, \hbar, c$)	1.22×10^{19} GeV
Higgs-VEV v	246.22 GeV (theoretisch)	$v = \frac{4}{3} \cdot \xi_0^{-1/2} \cdot K_{\text{quantum}}$ (see appendix)	246.2 GeV
QCD scale Λ_{QCD}	~ 217 MeV (free parameter)	$\Lambda_{QCD} = v \cdot \xi^{1/3}$ $= 246$ GeV$\cdot \xi^{1/3}$	200 MeV
LEVEL 3: HIGGS SECTOR (dependent on v)			
Higgs mass m_h	125.25 GeV (measured)	$m_h = v \cdot \xi^{1/4}$ $= 246 \cdot (1.333 \times 10^{-4})^{1/4}$	125 GeV

Table continued

SM Parameter	SM Value	T0 Formula	T0 Value
Higgs self-coupling λ_h	0.13 (derived)	$\lambda_h = \frac{m_h^2}{2v^2}$ $= \frac{(125)^2}{2(246)^2}$	0.129

LEVEL 4: FERMION MASSES (dependent on v and ξ)

Leptons:

Electron mass m_e	0.511 MeV (free parameter)	$m_e = v \cdot \frac{4}{3} \cdot \xi^{3/2}$ $= 246 \text{ GeV} \cdot \frac{4}{3} \cdot \xi^{3/2}$	0.502 MeV
Muon mass m_μ	105.66 MeV (free parameter)	$m_\mu = v \cdot \frac{16}{5} \cdot \xi^1$ $= 246 \text{ GeV} \cdot \frac{16}{5} \cdot \xi$	105.0 MeV
Tau mass m_τ	1776.86 MeV (free parameter)	$m_\tau = v \cdot \frac{5}{4} \cdot \xi^{2/3}$ $= 246 \text{ GeV} \cdot \frac{5}{4} \cdot \xi^{2/3}$	1778 MeV

Up-type quarks:

Up quark mass m_u	2.16 MeV	$m_u = v \cdot 6 \cdot \xi^{3/2}$	2.27 MeV
Charm quark mass m_c	1.27 GeV	$m_c = v \cdot \frac{8}{9} \cdot \xi^{2/3}$	1.279 GeV
Top quark mass m_t	172.76 GeV	$m_t = v \cdot \frac{1}{28} \cdot \xi^{-1/3}$	173.0 GeV

Down-type quarks:

Down quark mass m_d	4.67 MeV	$m_d = v \cdot \frac{25}{2} \cdot \xi^{3/2}$	4.72 MeV
Strange quark mass m_s	93.4 MeV	$m_s = v \cdot 3 \cdot \xi^1$	97.9 MeV
Bottom quark mass m_b	4.18 GeV	$m_b = v \cdot \frac{3}{2} \cdot \xi^{1/2}$	4.254 GeV

LEVEL 5: NEUTRINO MASSES (dependent on v and double ξ)

Electron neutrino m_{ν_e}	< 2 eV (upper limit)	$m_{\nu_e} = v \cdot r_{\nu_e} \cdot \xi^{3/2} \cdot \xi^3$ with $r_{\nu_e} \sim 1$	$\sim 10^{-3}$ eV (prediction)
Muon neutrino m_{ν_μ}	< 0.19 MeV	$m_{\nu_\mu} = v \cdot r_{\nu_\mu} \cdot \xi^1 \cdot \xi^3$	$\sim 10^{-2}$ eV
Tau neutrino m_{ν_τ}	< 18.2 MeV	$m_{\nu_\tau} = v \cdot r_{\nu_\tau} \cdot \xi^{2/3} \cdot \xi^3$	$\sim 10^{-1}$ eV

LEVEL 6: MIXING MATRICES (dependent on mass ratios)

CKM Matrix (Quarks):

$|V_{us}|$ (Cabibbo)	0.22452	$|V_{us}| = \sqrt{\frac{m_d}{m_s}} \cdot f_{Cab}$ with $f_{Cab} = \sqrt{\frac{m_s - m_d}{m_s + m_d}}$	0.225
$|V_{ub}|$	0.00365	$|V_{ub}| = \sqrt{\frac{m_d}{m_b}} \cdot \xi^{1/4}$	0.0037
$|V_{ud}|$	0.97446	$|V_{ud}| = \sqrt{1 - |V_{us}|^2 - |V_{ub}|^2}$	0.974

Table continued

SM Parameter	SM Value	T0 Formula	T0 Value
		(unitarity)	
CKM CP phase δ_{CKM}	1.20 rad	$\delta_{CKM} = \arcsin\left(2\sqrt{2}\xi^{1/2}/3\right)$	1.2 rad
PMNS Matrix (Neutrinos):			
θ_{12} (Solar)	33.44ř	$\theta_{12} = \arcsin\sqrt{m_{\nu_1}/m_{\nu_2}}$	33.5ř
θ_{23} (Atmospheric)	49.2ř	$\theta_{23} = \arcsin\sqrt{m_{\nu_2}/m_{\nu_3}}$	49ř
θ_{13} (Reactor)	8.57ř	$\theta_{13} = \arcsin\left(\xi^{1/3}\right)$	8.6ř
PMNS CP phase δ_{CP}	unknown	$\delta_{CP} = \pi(1-2\xi)$	1.57 rad
LEVEL 7: DERIVED PARAMETERS			
Weinberg angle $\sin^2\theta_W$	0.2312	$\sin^2\theta_W = \frac{1}{4}(1-\sqrt{1-4\alpha_W})$ with α_W from Level 1	0.231
Strong CP phase θ_{QCD}	$< 10^{-10}$ (upper limit)	$\theta_{QCD} = \xi^2$	1.78×10^{-8} (prediction)

0.11.3   Summary of Parameter Reduction

Parameter Category	SM (free)	T0 (free)
Coupling constants	3	0
Fermion masses (charged)	9	0
Neutrino masses	3	0
CKM matrix	4	0
PMNS matrix	4	0
Higgs parameters	2	0
QCD parameters	2	0
Total	**27+**	**0**

Table 2: Reduction from 27+ free parameters to a single constant

0.11.4   The Hierarchical Derivation Structure

The table shows the clear hierarchy of parameter derivation:

1. **Level 0**: Only ξ as fundamental constant

2. **Level 1**: Coupling constants directly from ξ

3. **Level 2**: Energy scales from ξ and reference scales

4. **Level 3**: Higgs parameters from energy scales

5. **Level 4**: Fermion masses from v and ξ

6. **Level 5**: Neutrino masses with additional suppression

7. **Level 6**: Mixing parameters from mass ratios

8. **Level 7**: Further derived parameters

Each level uses only parameters that were defined in previous levels.

0.11.5   Critical Notes

(*) Note on the Fine Structure Constant:
The fine structure constant has a dual function in the T0 system:

- $\alpha_{EM} = 1$ is a **unit convention** (like $c = 1$)

- $\varepsilon_T = \xi \cdot f_{geom}$ is the **physical EM coupling**

Unit System: All T0 values apply in natural units with $\hbar = c = 1$. Transformation to SI units is required for experimental comparisons.

0.12   Cosmological Parameters: Standard Cosmology (ΛCDM) vs T0 System

0.12.1   Fundamental Paradigm Shift

> **Warning: Fundamental Differences**
>
> The T0 system postulates a **static, eternal universe** without a Big Bang, while standard cosmology is based on an **expanding universe** with a Big Bang. The parameters are therefore often not directly comparable but represent different physical concepts.