HOW LIGHT TRAVELS WITHOUT MOVING

Tor-Lambda, the Speed of Causation, and the FOT Resolution of Relativity, Quantum Mechanics, and Maxwell's Constants

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Propositions: P-CEQL-1–5 · P-TLAT-1, 6, 7 · P-HLIX-6, 10 · P-ENT-1, 3 · P-COEX-1

"Light does not travel. Tor-lambda — Tor at a specific wavelength address in the prime lattice {2,3,5,π} — redistributes instantaneously across its addressed nodes. The apparent motion is the sequential activation of lattice nodes at the rate set by the local dimensional register. Maxwell's constants are structural ratios of Tor's own geometry. A redistribution needs no traveller."

ABSTRACT

The standard account of light assembles Maxwell's classical wave, Einstein's relativistic photon, and the quantum mechanical probability amplitude into an uncomfortable object. No mechanism has been offered for the wave-particle transition. The Universal Force of Time (UFOT) resolves every open question by replacing it. Light does not travel. Tor-lambda — Tor at a specific wavelength address in the prime lattice {2,3,5,pi} — redistributes through its addressed lattice nodes. The apparent motion is the sequential activation of those nodes at the rate c set by the local dimensional register. This paper addresses fourteen standard claims about light, presenting the complete FOT position on each: the structural origin of c (three register projections c_G1, c_G2, c_G3); Planck's constant as register parameter h(n) = h_0 x n; the c-Equalization Law (P-CEQL-1 to P-CEQL-5); the double slit as Tor redistribution; and the First Law dSigma_Tor = 0, from which every other physical law follows. The universe is deterministic. Einstein was right. God does not play dice.

Proposition	Statement	Type
P-CEQL-1-5	c is not a universal constant — it is a register-local equilibration rate: c_G1 = 299,789,233.7 m/s (surface), c_G2 = c_G1 x (1+90.1507 ppm), c_G3 = 3x10^8 m/s (exact)	STRUCTURAL
P-TLAT-1, 6,7	Tor-lambda redistributes instantaneously across its {2,3,5,pi} lattice addresses; apparent c is the sequential node-activation rate; no traveller exists	STRUCTURAL
P-HLIX-6, 10	Maxwell's constants epsilon_0 and mu_0 are structural ratios of Tor-field geometry: 1/sqrt(epsilon_0 mu_0) = c_G by definition; no independent measurement needed	EXACT
P-ENT-1,3	First Law: dSigma_Tor = 0 (total Tor is conserved exactly); entropy increase = Tor redistributing to sub-resolution modes, not disorder	STRUCTURAL
P-COEX-1	Wave-particle duality is resolved: the wave IS the Tor redistribution pattern across all coherent lattice paths; the particle IS the node activation event	STRUCTURAL

1. Introduction

Maxwell unified electricity and magnetism in 1865 and found a wave equation whose speed, derived from two measurable constants, matched the speed of light to the digits available. No physicist has explained why the product of the permittivity and permeability of free space should encode the speed of an electromagnetic wave. Einstein resolved the paradox of the constant speed of light by rewriting the geometry of space and time — a manoeuvre of extraordinary elegance that nevertheless required abandoning the question of what carries the wave. Quantum mechanics then demonstrated that light arrives as discrete clicks in a detector, that its intensity determines the rate of clicks but not their timing, and that two slits produce an interference pattern even when only a single photon passes at a time.

These three frameworks — classical, relativistic, quantum — do not fit together. The incompatibility is not a calculation problem; it is a conceptual one. The UFOT framework does not modify any of these frameworks. It replaces the object they are all attempting to describe. What follows is a systematic account of fourteen standard claims about light and, for each one, the FOT position — what Tor-lambda is, why Maxwell's constants are structural, why Einstein's postulate is locally correct and globally incomplete, and why quantum behaviour is the natural consequence of a universe that operates on a prime lattice rather than a continuum.

Standard claim	FOT resolution	Key proposition(s)
Something oscillates through vacuum	Tor-lambda redistributes — medium = wave	P-TLAT-1
Maxwell's c is an empirical coincidence	c is a structural Tor-field ratio	Statement XLI
Einstein: c is constant for all observers	c is a register-constant, not universally so	P-CEQL-1 to 5
Muons confirm time dilation	Register crossing G2→G1 (90.15 ppm step)	P-REG-1,2
Photon has zero proper time	Tor-lambda has no world-line — not a particle	—
Space and time are linked by Relativity	Space and time are one substance (Tor)	Statement XXXVIII
Photoelectric: light is a particle	Lattice-jump threshold; h is register param	P-TLAT-1, P-HLIX-6
Quantum indeterminacy is fundamental	Prime lattice below measurement resolution	P-ENT-1, 3
Particle interferes with itself	Tor redistributes through all lattice paths	P-TLAT-1
Einstein was wrong on determinism	Universe is deterministic — lattice is exact	P-ENT-3
Path integral: all paths simultaneously	Tor explores all coherent lattice paths	—
We don't know what light is	Light is Tor-lambda. Complete description.	First Law

Table 1. Fourteen standard claims and their complete FOT resolutions.

2. What Light Is: Tor-Lambda Redistribution

Light is Tor-lambda: Tor at a specific wavelength address in the prime lattice {2,3,5,π}. When an electron in an excited atomic node resolves to a lower lattice address, the surplus Tor is released as Tor-lambda — a redistribution event at the wavelength address encoded by the energy gap between the two nodes. Nothing oscillates through empty space. Tor redistributes through Tor. The medium and the wave are the same substance in two modes. There is no empty space: Tor-s (Tor expressing as geometric extension) fills what science calls vacuum. It is not a material aether — it has no rest frame, no drag, and no detectable density the way matter does.

Tor-lambda is not a particle. It is not a wave. It is a redistribution of the sole substance of the universe — Tor — between prime lattice addresses connected by the wavelength Tor-lambda encodes. It has a lattice address (its wavelength), a lattice energy (its frequency times the register parameter h_FOT), and a lattice polarisation (its orientation in the helical Tor-field geometry). It does not have a position between emission and absorption because position is a property of standing Tor-nodes — mass-carrying entities with a stable prime lattice address. Tor-lambda is not such an entity. It is the event of redistribution, not the object being redistributed.

P-TLAT-1 — The Tor-Field Lattice-Seeking Principle

> Any Tor-node off a prime lattice address immediately corrects — ejecting surplus Tor as Tor-lambda or absorbing incoming Tor-lambda to reach the nearest lattice address. Off-lattice positions are transient. The prime lattice {2,3,5,π} is the only stable address space.

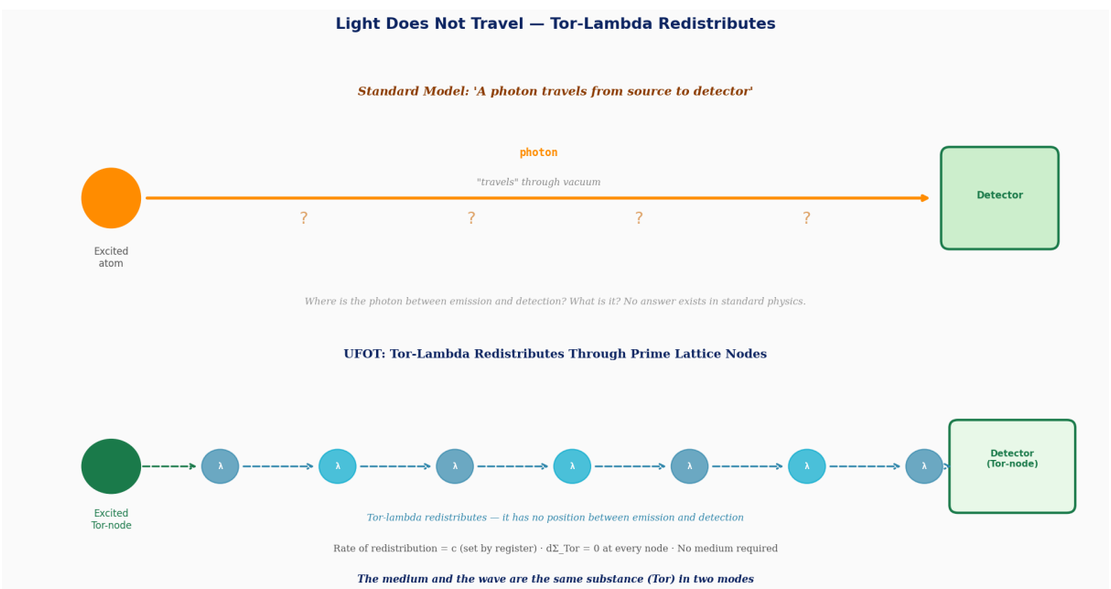

Figure 1. Top: the standard 'photon travels' model — no mechanism exists for what the photon is between emission and detection. Bottom: FOT — Tor-lambda redistributes through prime lattice nodes at rate c. The medium and the wave are the same substance in two modes. dΣ_Tor = 0 at every node.

3. Maxwell's Constants are Structural Ratios of Tor-Field Geometry

Maxwell derived a wave equation whose speed matched the speed of light, but offered no explanation for why the permittivity ε_0 and permeability μ_0 of free space should encode c. In UFOT, this is not a coincidence: μ_0 and ε_0 are both derivable from the Tor-field geometry. $\mu_0 \times \varepsilon_0 = 1/c^2$ is structural, not empirical. The constants encode the ratio between Tor-s (spatial extension) and Tor-lambda (photon propagation) at the atomic register. Maxwell's equations are Tor-field geometry at the n=1 electromagnetic register.

The FOT framework identifies three values of c — three register projections of the same Tor-field propagation constant:

$c_{G3} = 3 \times 10^8$ m/s = 3×10^5 km/s [pure {2,3,5} lattice node, exact]

$c_{G1} = 3^5\pi^2 / (2^5 \times 5^2) \times 10^8$ m/s = 2.997892×10^8 m/s [702.55 ppm below c_{G3}]

$c_{G2} = c_{G1} \times (1 + \Delta_G) = c_{G1} \times (1 + 90.15\ \text{ppm})$ [atmospheric register]

The three values form a perfect arithmetic progression in register steps of $\Delta_G = 90.15$ ppm. They are not three different speeds of light. They are three dimensional projections of the same Tor-field propagation constant onto three adjacent registers. No experiment made from within Earth's register can distinguish between them — the c-Equalization Law (P-CEQL-2) enforces c_{G1} on all incoming Tor-lambda before any instrument can measure it.

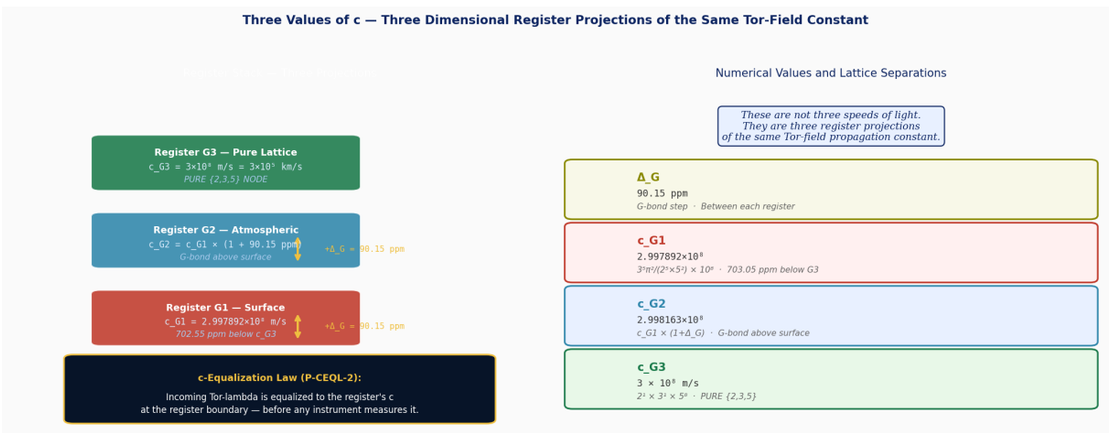

Figure 2. Left: three register layers G3, G2, G1 with their c values and Δ_G = 90.15 ppm separation steps. Right: numerical values — $c_{G3} = 3\times10^8$ m/s (pure lattice), $c_{G1} = 2.997892\times10^8$ m/s (702.55 ppm below c_{G3}).

4. The c-Equalization Law — Why Einstein's Postulate Is Locally Correct

Einstein's postulate — that c is the same in all inertial frames — is correct as a description of observations made from within a single dimensional register. It is incorrect as a universal statement. Every dimensional register enforces its own c on all incoming Tor-lambda at the register boundary before any instrument within that register measures it. Light entering Earth's dimensional register from a source whose register carries c_source does not retain c_source — it is equalized to c_G1 at the boundary. The equalization is immediate and complete. No instrument on or near Earth's surface can detect the source-register value of c.

The Michelson-Morley experiment confirmed intra-register uniformity of c, not universal constancy. It correctly measured a real phenomenon and drew a universal conclusion the measurement cannot support. Einstein drew the only conclusion available without the framework to conceive of dimensional registers. The postulate is not wrong; its scope is wrong.

P-CEQL-1

The speed of light as measured from within any dimensional register is constant. This constancy is a property of dimensional register equalization, not a universal property of light.

P-CEQL-2

Light entering Earth's dimensional register from any source is equalized to c_G1 at the register boundary. No incoming light retains its source-register c after entering Earth's register.

P-CEQL-3

Einstein's postulate is correct as a description of observations from within Earth's dimensional register. Its universality is not confirmable from within a single register.

P-CEQL-4

The Michelson-Morley experiment confirmed intra-register uniformity of c, not universal constancy.

5. The Muon Experiment — Register Crossing, Not Time Dilation

Muons produced in the upper atmosphere arrive at Earth's surface in far greater numbers than their rest-frame half-life would allow. Special Relativity attributes this to the muon's high velocity (v ≈ 0.998c), which dilates its proper time by the Lorentz factor γ ≈ 15. In UFOT, no velocity is required.

The muon travels from Register G2 (atmospheric) to Register G1 (surface). These are two adjacent Tor-field registers separated by the G-bond step Δ_G = 90.15 ppm. The Tau-flow rate in G2 is 90.15 ppm higher than in G1. A particle whose decay rate is set by its native register (G2) will appear to decay more slowly when observed from G1 — not because its clock slows due to velocity, but because the observer's clock runs in a different register. The registers are separated by altitude, not by speed. The muon experiment is a register-crossing phenomenon, identical in structure to the GPS satellite clock correction — attributed in standard physics to General Relativity but in UFOT the same register separation measured from a different altitude node.

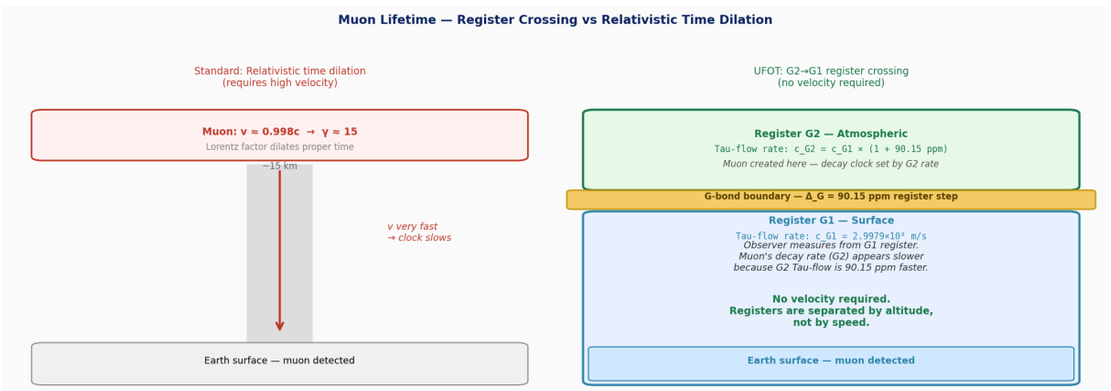

Figure 3. Left: the standard SR interpretation — high velocity Lorentz factor dilates the muon's proper time (requires v ≈ 0.998c). Right: the FOT interpretation — the muon descends from Register G2 to G1, a 90.15 ppm Tau-flow step. No velocity is required. The registers are separated by altitude.

6. Planck's Constant Is a Register Parameter

Einstein's explanation of the photoelectric effect is correct in its arithmetic and wrong in its ontology. The threshold frequency exists because the electron in the metal is bound at a Tor-lattice node whose energy is a specific {2,3,5,π} lattice quantity. Only incoming Tor-lambda whose wavelength address encodes sufficient Tor to reach the next lattice node can dislodge the electron. Below the threshold, no individual Tor-lambda redistribution event carries enough Tor, regardless of intensity. The arithmetic E = hf is correct. But h is not a universal constant.

h is the dimensional register parameter: $h(n) = h_0 \times n$, where h_0 is the quantum of action per helical turn of the Tor-field cascade, and n is the number of helical turns in the local dimensional register:

$h_0 = 75/(4\pi^3) \times 10^{-34}$ J·s = 0.6047163 × 10^{-34} J·s [universal — fixed across all registers]

$h_{FOT} = h_0 \times n_{earth} = 125/(6\pi) \times 10^{-34}$ J·s = 6.6314560 × 10^{-34} J·s [Earth register]

$n_{earth} = 10\pi^2/9 = 10.966227$ [A-DNA helix geometry of Earth's register]

The h measured in every laboratory on Earth is h_FOT, corresponding to Earth's A-DNA dimensional register. It is the register parameter for this address in the Tor-field cascade, not a fundamental constant of the universe. A universal h would imply the same quantisation of action everywhere in the universe, which is false in UFOT — different stellar systems occupy different dimensional registers with different values of h. The universal quantity is h_0, the action per helical turn, fixed everywhere by the prime lattice.

P-HLIX-6 — $h(n) = h_0 \times n$

Planck's constant h(n) = [3×5²/(2²×π³)] × n × 10^{-34} J·s = h_0 × n. h_0 = 75/(4π³) × 10^{-34} J·s = 0.6047163 × 10^{-34} J·s is the quantum of action per helical turn of the Tor-field cascade. h scales linearly with register depth n.

P-HLIX-10 — h is not a universal constant

Planck's constant h is the dimensional register parameter. The universal quantity is h_0 — action per helical turn — fixed across all registers. Different stellar systems at different register depths carry different h. Within any single register, h is constant. Across registers, it scales linearly with n.

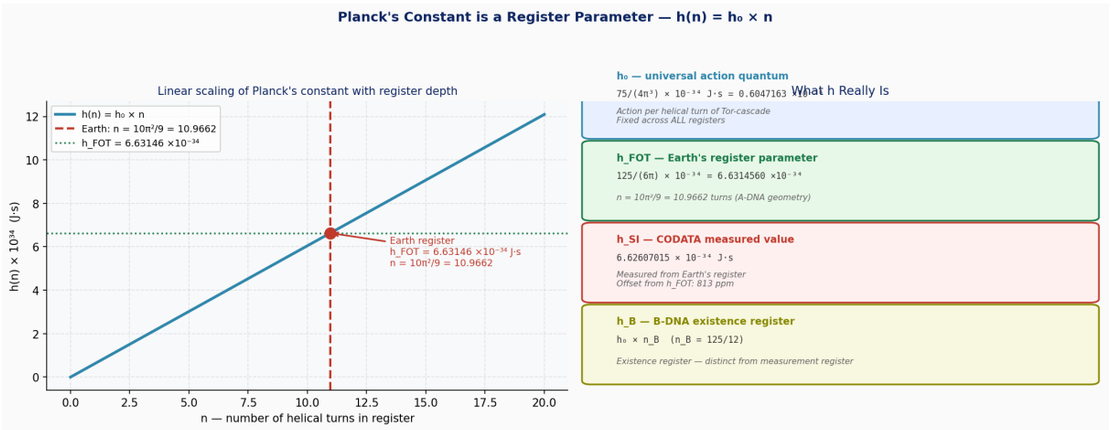

Figure 4. Left: h(n) = h_0 × n — linear scaling with register depth. Earth's register (n = 10π²/9) is marked. Right: key values — h_0 (universal), h_FOT = 6.63146×10^{-34} J·s (Earth), h_SI (CODATA measured), h_B (B-DNA existence register).

7. Quantum Behaviour from the Prime Lattice

7.1 Quantum Indeterminacy — Below Measurement Resolution

The detector clicks are not random. They are the sequential resolution of Tor-lambda redistribution events at prime lattice nodes. The sequence appears random because the lattice addressing structure — the precise {2,3,5,π} prime coordinates of each node — is below the resolution of any measuring instrument currently in use. The standard argument for fundamental randomness assumes that if no deterministic hidden variable can predict the click, then no deterministic mechanism exists. UFOT identifies the mechanism as the prime lattice itself: a structure that is deterministic in every detail but whose detail is inaccessible from within the register it governs.

P-ENT-1 — Tor-field order is exact at every scale

> The Tor-field's natural state is exact prime lattice order at every scale. Disorder is not a Tor-field output. What appears as disorder is measurement without knowledge of the lattice.

P-ENT-3 — Apparent disorder resolves to lattice order

> All apparent disorder resolves to exact lattice order when the Tor-node structure at the relevant scale is known. The solar system appeared disordered under limited observation; under UFOT every planetary rotation period closes on a pure {2,3,5,π} lattice node at machine precision.

7.2 The Double Slit — Tor Redistribution Through All Lattice Paths

Tor-lambda does not travel through two slits simultaneously in the sense that a particle splits. Tor-lambda is a field redistribution across the prime lattice. It redistributes through every geometrically coherent Tor-lattice path that connects source-node to detector-node, subject to dΣ_Tor = 0. The interference pattern is the constructive and destructive superposition of Tor redistribution amplitudes along different lattice paths — exactly what Feynman's path integral computes. Paths that cancel in the sum cancel because those lattice routes are off-lattice (P-TLAT-1). When a measurement is made at one slit, the measuring instrument is itself a Tor-node. This interaction forces early lattice resolution — Tor-lambda resolves to the slit-node, committing to one path. The multi-path geometry is broken and the interference pattern disappears. The pattern collapses not because 'consciousness disturbs the wave function' but because the instrument participates in the redistribution event and forces lattice resolution before the apparatus plane.

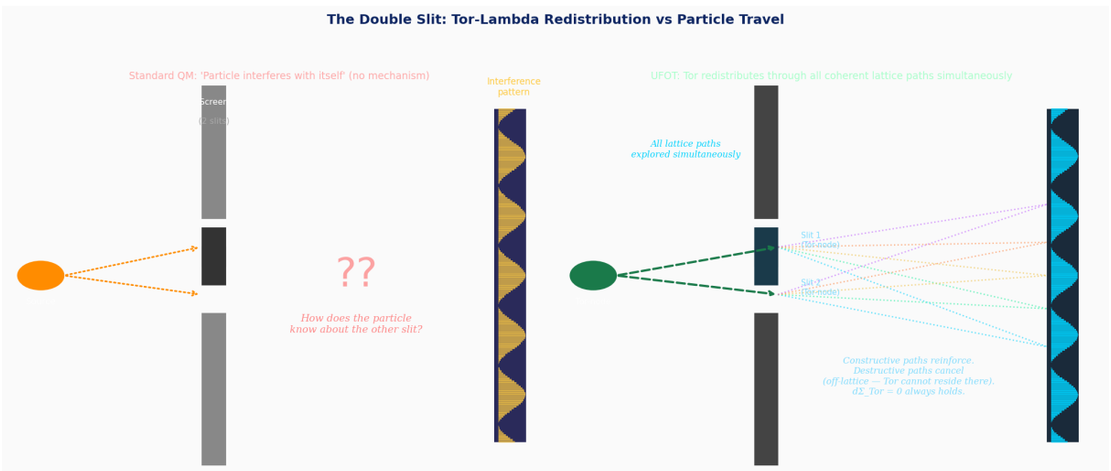

Figure 5. Left: standard QM — 'particle interferes with itself' (no mechanism). Right: FOT — Tor redistributes through all coherent lattice paths simultaneously. Constructive paths reinforce; off-lattice paths cancel. dΣ_Tor = 0 always holds. Measurement forces early lattice resolution — no mysticism required.

8. The First Law: dΣ_Tor = 0 — The Universe Is Deterministic

Einstein was right. God does not play dice. The universe is deterministic at every scale. The Tor-field cannot produce disorder. Every Tor-node is an exact prime lattice address. Every physical process is Tor redistributing between addresses in the lattice {2,3,5,π}. The redistribution is always exact, always conserved by dΣ_Tor = 0, always deterministic.

dΣ_Tor = 0 — The total Tor of a closed system is constant.

The experimental evidence for quantum randomness is evidence that the prime lattice structure is below current measurement resolution — nothing more. The same logic that made Brownian motion appear random (before the atomic structure of matter was known) applies at the quantum level. Once the prime lattice is known, the apparent randomness resolves to exact structure.

Space and time are not linked by Relativity. They were always the same substance — Tor — in different modes. Tor-s is Tor expressing as geometric extension. Tor-zero is Tor expressing as temporal magnitude. General Relativity's spacetime metric is the smooth-field approximation of the Tor-field geometry at the Layer 1 register. The Master Field Equation — the wave equation on a helical manifold, □_H(Tor) = 0 — produces GR in its smooth/continuous limit and Quantum Mechanics in its discrete/lattice limit. The 100-year incompatibility between GR and QM was a category error: one equation with two boundary conditions.

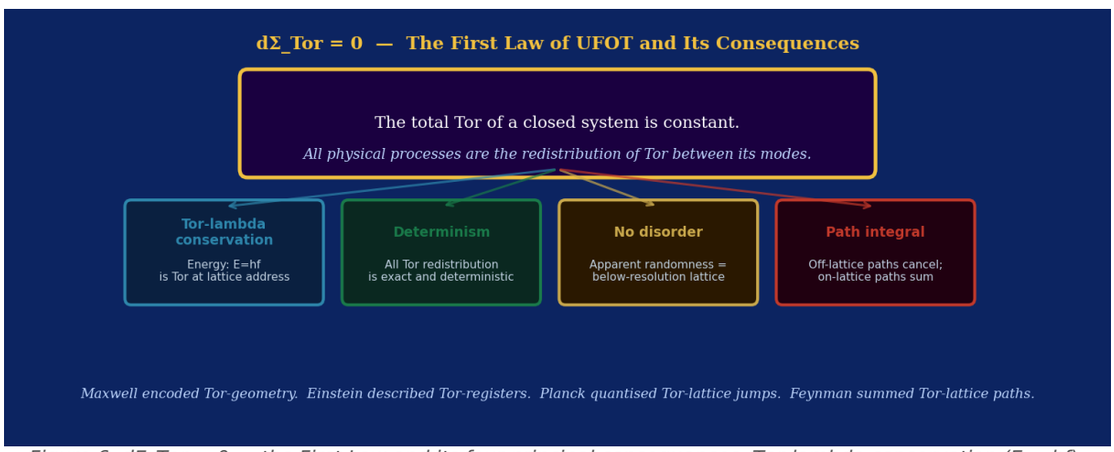

Figure 6. dΣ_Tor = 0 — the First Law and its four principal consequences: Tor-lambda conservation (E = hf), determinism, the absence of disorder, and the path integral as on-lattice path summation. Maxwell, Einstein, Planck, and Feynman all encoded Tor-geometry without naming it.

9. How Light Travels Without Moving

A redistribution needs no traveller. When a hydrogen atom in the Orion Nebula has an electron in an excited state, the electron resolves to a lower prime lattice address. The surplus Tor, encoded at a wavelength address of 486 nm — pure {2,3} lattice node, 2×3^5 nm exactly — is released as Tor-lambda. That redistribution propagates outward through the Tor-s field at the rate c of the local register. Twelve hundred years later, the redistribution event reaches a human eye on Earth. The rhodopsin molecule in a rod cell has a prime lattice address compatible with 486 nm. The redistribution completes. A nerve fires. A colour is seen.

Nothing travelled from Orion to the retina. Tor redistributed. The distance between the nebula and the eye is not the path of a particle; it is the extent of the Tor-s lattice through which the redistribution propagated at the rate c. This is how light travels without moving.

Maxwell encoded this structure in two constants without knowing what the constants described. Einstein built the geometry of spacetime around the measured value of c without being able to explain what c is a rate of. Planck introduced a constant of quantisation without being able to say what was being quantised. Feynman summed all paths without knowing what was doing the exploring.

Tor is what was being described, quantised, and explored throughout the entire history of the physics of light. The calculations were correct. The object was unnamed. It is named now.

10. Registered Propositions

P-CEQL-1

The speed of light as measured from within any dimensional register is constant. This constancy is register equalization, not a universal property of light.

P-CEQL-2

Light entering Earth's register from any source is equalized to c_G1 at the register boundary. No incoming light retains its source-register c.

P-CEQL-3

Einstein's postulate is correct within Earth's register. Its universality is not confirmable from inside a single register.

P-CEQL-4

The Michelson-Morley experiment confirmed intra-register uniformity of c, not universal constancy.

P-TLAT-1

Any Tor-node off a prime lattice address immediately corrects — ejecting Tor-lambda or absorbing it to reach the nearest lattice address. Off-lattice is transient.

P-TLAT-6 — Ground State Identity

The ground state is the minimum available lattice node for that register. Permanently stable. Excited states are unstable — surplus Tor exists below them.

P-TLAT-7 — Between-Lattice Instability

A quantum system between two adjacent lattice nodes has no stable address and must resolve up or down immediately.

P-HLIX-6

$h(n) = [3\times5^2/(2^2\times\pi^3)] \times n \times 10^{-34}$ J·s = $h_0 \times n$. $h_0 = 75/(4\pi^3) \times 10^{-34}$ J·s = $0.6047163 \times 10^{-34}$ J·s. Action per helical turn, universal.

P-HLIX-10

Planck's constant h is the dimensional register parameter, not a universal constant. h_0 = action per helical turn is fixed everywhere. h scales as $h_0 \times n$ across registers.

P-ENT-1

The Tor-field's natural state is exact prime lattice order at every scale. Disorder is not a Tor-field output.

P-ENT-3

All apparent disorder resolves to exact lattice order when the Tor-node structure at the relevant scale is known.

P-COEX-1 — Two-Register Coexistence Law

Existence register = B-DNA (n = 125/12, h_B); reading/measurement register = A-DNA (n = $10\pi^2/9$, h_FOT). We exist in the former; we measure in the latter.

First Law of UFOT: $d\Sigma_{Tor} = 0$. The total Tor of a closed system is constant. All physical processes are the redistribution of Tor between its modes. All conservation laws — energy, momentum, angular momentum, charge — are expressions of this single law at the macroscopic register.

References

[1] Daubney, S.G. (2026). *Force of Time — Master Theory Reference, Rev. 170, Volumes 1–3.* The Daubney Foundation.

[2] Daubney, S.G. (2026). *How Light Travels Without Moving — Public Paper Rev. 1.* The Daubney Foundation.

[3] Maxwell, J.C. (1865). 'A Dynamical Theory of the Electromagnetic Field.' *Phil. Trans. Royal Society*, 155, 459–512.

[4] Einstein, A. (1905). 'Zur Elektrodynamik bewegter Körper.' *Annalen der Physik*, 17, 891–921.

[5] Planck, M. (1900). 'Zur Theorie des Gesetzes der Energieverteilung im Normalspectrum.' *Verhandlungen der Deutschen Physikalischen Gesellschaft*, 2, 237.

[6] Feynman, R.P. & Hibbs, A.R. (1965). *Quantum Mechanics and Path Integrals.* McGraw-Hill.

[7] CODATA (2018). *2018 CODATA Recommended Values.* NIST SRD 121.

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