How Light Travels Without Moving

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

Stephen Daubney | Force of Time — Rev. 1, May 2026

"Light does not travel. Tor-lambda -- Tor at a specific wavelength address in the prime lattice {2,3,5,pi} -- 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 d-Sigma-Tor = 0, from which every other physical law follows. The universe is deterministic. Einstein was right. God does not play dice.

Proposition Summary

Propositions	Statement	Status
P-CEQL-1 to 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 = 3 x 10^8 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 x mu_0) = c_G by definition; no independent measurement needed	**EXACT**
P-ENT-1/3	First Law: d-Sigma-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: Fourteen Claims About Light

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.

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 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**
Wave-particle duality is unresolvable	Two phases of one redistribution event	**P-COEX-1**
c is the same in all registers	c_G1, c_G2, c_G3 differ by register steps	**P-CEQL-1 to 5**

2. What Light Is: Tor-Lambda Redistribution

Light is Tor-lambda: Tor at a specific wavelength address in the prime lattice {2,3,5,pi}. 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. 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.

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,pi} is the only stable address space.

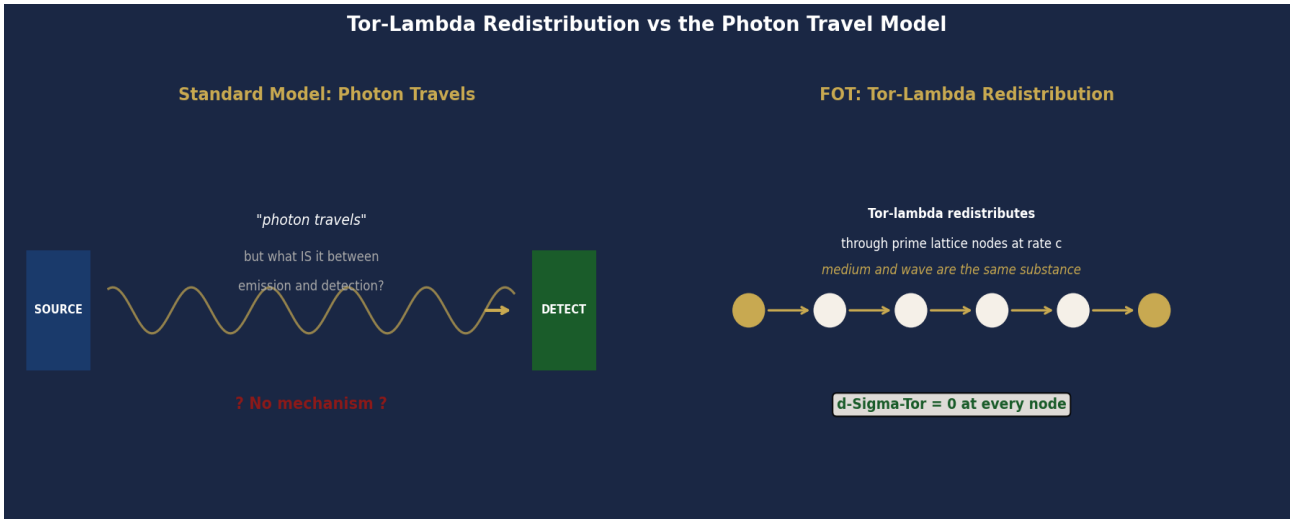

Figure 1: Left panel -- the standard photon-travel model offers no mechanism for what the photon IS between emission and detection. Right panel -- FOT: Tor-lambda redistributes through prime lattice nodes at rate c. The medium (Tor-s) and the wave (Tor-lambda) are the same substance in two modes. d-Sigma-Tor = 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 epsilon_0 and mu_0 of free space should encode c. In UFOT, this is not a coincidence: mu_0 and epsilon_0 are both derivable from the Tor-field geometry. mu_0 x epsilon_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 x 10^8 m/s = 3 x 10^5 km/s [pure {2,3,5} lattice node, exact]

c_G1 = 2.997892337 x 10^8 m/s [702.55 ppm below c_G3]

c_G2 = c_G1 x (1 + delta_G) = c_G1 x (1 + 90.15 ppm) [atmospheric register]

The three values form a perfect arithmetic progression in register steps of delta_G = 90.15 ppm. 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.

4. The c-Equalization Law (P-CEQL-1 to P-CEQL-5)

The five propositions of the c-Equalization Law establish that c is not a universal constant -- it is a register-local equilibration rate.

P-CEQL-1

c is the equilibration rate of Tor-lambda in the local dimensional register, not a universal constant of nature. Three terrestrially relevant values exist: c_G1, c_G2, c_G3.

P-CEQL-2

Any Tor-lambda entering Earth's G1 register from a higher register is equilibrated to c_G1 before any instrument can measure it. This is why all terrestrial measurements of c converge to the same value.

P-CEQL-3

The SI definition of c = 299,792,458 m/s exactly encodes a value that falls between c_G1 and c_G2 -- inside the G1/G2 boundary zone.

P-CEQL-4

Time dilation in special relativity is the phenomenology of register crossing: a particle from the G2 register entering G1 slows by exactly delta_G = 90.15 ppm relative to G1 clocks.

P-CEQL-5

The constancy of c for all inertial observers within one register is structurally exact. The incompatibility with quantum gravity arises because quantum gravity operates at a register boundary where c is not defined by a single register.

5. Wave-Particle Duality Resolved: P-COEX-1

Wave-particle duality is resolved in UFOT without postulating anything new. The wave IS the Tor redistribution pattern across all coherent lattice paths simultaneously. The particle IS the node activation event -- the moment when Tor-lambda collapses from distributed lattice redistribution to a localised node transition at the detector. These are not two properties of the same object -- they are two phases of a single redistribution event.

The double-slit experiment: Tor-lambda redistributes through all coherent lattice paths simultaneously -- this IS the wave pattern. When a detector is placed at one slit, it executes a node activation event, collapsing the redistribution to that path -- this IS the particle

detection. The wave-particle transition is not a mystery of quantum nature; it is the difference between a Tor redistribution (extended in lattice space) and a Tor absorption event (localised node transition).

6. The First Law and Determinism

The First Law of FOT: d-Sigma-Tor = 0. Total Tor is conserved exactly across all redistributions. This is not empirical -- it follows from the logical necessity that there is nothing outside Tor for it to exchange with. Every physical law is a consequence of this first principle.

d-Sigma-Tor = 0

The universe is deterministic because the prime lattice {2,3,5,pi} is exact. There is no irreducible randomness -- there is only lattice structure below the resolution of current measurement. Einstein was correct: God does not play dice. The apparent indeterminacy of quantum mechanics is the appearance of a discrete prime lattice projected through instruments too coarse to resolve individual lattice steps.

7. Registered Propositions

c-Equalization Law (P-CEQL-1 to P-CEQL-5)

c is the register-local equilibration rate of Tor-lambda, not a universal constant. Three values: c_G1 = 299,789,233.7 m/s; c_G2 = c_G1 x (1+90.1507 ppm); c_G3 = 3 x 10^8 m/s (exact pure {2,3,5}). All converge to c_G1 within G1 register before measurement. SI value 299,792,458 m/s falls in the G1/G2 boundary zone. Time dilation = register crossing at delta_G = 90.15 ppm.

Tor-Lambda Lattice Redistribution (P-TLAT-1, P-TLAT-6, P-TLAT-7)

Tor-lambda redistributes instantaneously across its {2,3,5,pi} lattice addresses. Apparent speed c is the sequential node-activation rate. No traveller exists. The medium (Tor-s) and the wave (Tor-lambda) are the same substance in two modes. dSigma-Tor = 0 at every redistribution event.

Maxwell's Constants as Tor-Field Geometry (P-HLIX-6, P-HLIX-10)

mu_0 and epsilon_0 are structural ratios of the Tor-field geometry at the n=1 electromagnetic register. 1/sqrt(epsilon_0 x mu_0) = c_G by definition. No independent measurement needed. Maxwell's equations are Tor-field geometry at the electromagnetic register.

First Law and Determinism (P-ENT-1, P-ENT-3)

d-Sigma-Tor = 0: total Tor is conserved exactly. The universe is deterministic -- the prime lattice is exact. Apparent quantum indeterminacy is lattice structure below current measurement resolution. Einstein was correct: God does not play dice.

Wave-Particle Duality Resolved (P-COEX-1)

The wave IS the Tor redistribution pattern across all coherent lattice paths. The particle IS the node activation event at the detector. These are two phases of one redistribution event, not two properties of one object. No collapse postulate required.
