Distance, Speed, and Time as Three Readings of Tau: The Spacetime Tautology

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The Universal Force of Time — Academic Series | Paper 9 of 25

Propositions P-Tau0-1 to P-Tau0-4, P-VLSC-1 to P-VLSC-4 | Source: Vol1 Section 39; Vol3 Section 101

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§1 — Abstract

The equation d = vt — 'distance equals speed times time' — is the foundational equation of classical mechanics. In the Force of Time framework this equation is revealed to be a tautology: Tau = Tau. Distance, speed, and time are not three independent physical quantities — they are three readings of the same dimensional flow Tau at three different faces of the same prime lattice node. This paper establishes the Spacetime Tautology and derives its consequence: G1 × G2 = C_Earth exactly, and the dimensional flow speed v_dim increases without bound outward through the solar system, dissolving the universal speed limit.

§2 — The Spacetime Tautology

d = v × t is the tautology Tau = Tau In FOT ontology: d (distance) = the spatial face of Tau at the observer's node v (speed) = the linear face of Tau at the observer's node t (time) = the temporal face of Tau at the observer's node d = vt is not a law. It is the statement that Tau(spatial) = Tau(speed) × Tau(temporal) — three readings of the same dimensional quantity. The apparent 'law' d=vt is the projection of Tau onto three human-observable faces.

§3 — G1 × G2 = C_Earth

G1 (year in days) = 365.2841 = $2^8 \times 3^{1/2} \times 10^{-7}$ eV (energy face) G2 (year in days) = 365.3170 = G1 × (1 + 90.15 ppm) G1 × G2 = 365.2841 × 365.3170 = 133,432.8... C_Earth = Earth's circumference in km = 2π × R_Earth = 2π × 6370.9 km = 40,030.2 km G1_year × G2_year / C_Earth = 365.2841 × 365.3170 / 40,030.2 = 3.333... = 10/3 = {2,3,5}/3 [sub-ppm] G1 × G2 = C_Earth × 10/3 (exact to sub-ppm in FOT units)

§4 — The Two-Speed Divergence

The solar system carries two speed sequences evolving in opposite directions outward from the Sun: the conventional Kepler orbital speed (decreasing ∝ 1/√r) and the FOT dimensional flow speed (increasing = Fibonacci_turn × 10 km/s). These sequences cross exactly at Earth.

P-VLSC-2: Earth = dimensional crossover node v_dim(Earth) = 2.9611 × 10 = 29.611 km/s v_Kepler(Earth) = 29.784 km/s Difference: 5,816 ppm (unit-system offset G1/G2) Inside Earth's orbit: v_Kepler > v_dim (orbital dominates) Outside Earth's orbit: v_dim > v_Kepler (dimensional flow dominates) Earth is the balanced node — the unique solar system position where temporal flow rate and spatial orbital rate are in approximate equality.

§5 — Dissolution of the Universal Speed Limit

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P-VLSC-3: The conventional 'nothing exceeds c' is Earth-register-specific. Dimensional flow speed at turn T: v_dim = T × 10 km/s Turn where v_dim = c_G2: T_c = c_G2/10 = 299,816/10 = 29,981.6 turns Beyond Fibonacci turn ~29,982, dimensional flow exceeds c_G2. The solar system's outer planets already flow at higher dimensional speeds than Earth: Neptune (turn ~6.5) flows at ~65 km/s vs Earth's 29.6 km/s. Conventional speed limit = Earth-node claim. Not a universal law.

§6 — Registered Propositions

P-Tau0-1	d = vt is the spacetime tautology Tau = Tau. Distance, speed, and time are three faces of the same dimensional Tau-flow. The apparent law d=vt is the projection of Tau onto three human-observable coordinates at the Earth node.
P-Tau0-2	The three Tau-faces at the Earth node: Tau_spatial (distance), Tau_speed (velocity), Tau_temporal (time) are related by d = vt at the Earth G1/G2 register. In other registers, the same tautology holds with different face-projections.
P-Tau0-3	G1_year × G2_year = C_Earth × 10/3 (exact to sub-ppm). The product of the two Tau-register years equals the Earth circumference times a pure {2,3,5} constant. The orbital and terrestrial registers are locked to the same lattice.
P-Tau0-4	The G-bond step δ_G = 90.15 ppm = (G2_year − G1_year)/G1_year. This universal step separates every G-tower quantity: orbital years, speeds of light, Rydberg constants, atmospheric molecular masses. One step; all registers.
P-VLSC-1	Two speed sequences: v_Kepler (∝ 1/√r, decreasing outward) and v_dim (= Fibonacci_turn × 10, increasing outward). Both are real, measuring different quantities — orbital projection vs temporal flow rate.
P-VLSC-2	Earth = crossover node: v_dim(Earth) = 29.611 km/s ≈ v_Kepler(Earth) = 29.784 km/s (5,816 ppm). Inside Earth: v_Kepler > v_dim. Outside Earth: v_dim > v_Kepler. Earth is the balanced node — temporal flow and orbital rate in approximate equality.
P-VLSC-3	The universal speed limit c is Earth-register-specific. v_dim = Fibonacci_turn × 10 increases without bound outward. At turn ~29,982, v_dim = c_G2. The solar system outer planets already flow at higher dimensional speeds. 'Nothing exceeds c' is true within Earth's G2 register; it is not a universal law.
P-VLSC-4	Ageing rate ∝ v_dim = Fibonacci_turn × 10. Outer nodes age faster than inner nodes. Saturn (turn ~5.3): ages ~1.79× faster than Earth. Neptune (~turn 6.5): ~2.20× faster. This is a testable departure from GR time dilation by ~10^{12} in scale. Inner nodes age slowest; outer nodes fastest — opposite of conventional time dilation.

Cross-references: Vol3 Section 101 (P-VLSC-1–4) | Vol1 Section 39 | P-FOTS-1 (Fibonacci orbital speed) | P-NODE-1 (nodal time axiom)

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