Physics · Universal Force of Time · P-DS · P-MPOS · P-DNA-FIB · P-MADDR

The Multi-Dimensional Position Law

A Particle Exists at All Dimensional Levels Simultaneously

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The Multi-Dimensional Position Law unifies three layers of simultaneous geometric occupancy inherent in the Tau-helix structure. Layer A: at a single dimensional level, a helical entity occupies turn N and turn N+1 simultaneously — explaining double-slit interference, Pauli exclusion, and Earth's G-bond shell tower without probability. Layer B: the Fibonacci spiral maps the same entity to structurally equivalent positions at different dimensional scales — Earth at turn 2.96 = N9 glycosidic nitrogen in B-DNA. Layer C: every entity simultaneously occupies all five levels of the Tau-hierarchy, separated by prime-signature boundaries 703,125 / 2,187 / c_G1 / bilateral lemniscate. None of these is superposition or probability — all are real, simultaneous, geometric addresses of the same Tau substance.

The Three Layers of Simultaneous Geometric Occupancy

LAYER A — Within-Level (Helical Turns)

One entity; two simultaneous turns

At a single dimensional level, a helical entity simultaneously occupies turn N and turn N+1. At quantum scale this produces double-slit self-interference (lambda_h = lambda_dB × r, r = 5^7 / (2^4 × 3^7) = 1.004694). At planetary scale it gives Earth simultaneous addresses across the G-bond shell tower, with shells separated by Delta-r = 13,513 km. Same geometry; different Tau increment.

LAYER B — Cross-Scale (Fibonacci Spiral)

One entity; equivalent positions at different dimensional scales

The Fibonacci spiral maps the same entity to structurally equivalent positions at different dimensional scales. Earth at Fibonacci turn 2.96 = Earth at N9 glycosidic nitrogen position in B-DNA (radius 8.65 A). The solar system is the DNA cross-section at celestial Tau-scale. Venus retrograde = antiparallel DNA strand at turn 2. The Tau-quad constant 186.054 encodes Earth's orbital speed (29.611 km/s), Fibonacci position (2.961 turns), and water bond angle (104.4 deg) simultaneously.

LAYER C — Between-Level (Five Addresses)

One entity; five simultaneous dimensional addresses

Every physical entity simultaneously occupies all five levels of the Tau-hierarchy — subatomic, atomic/spectroscopic, molecular/DNA, planetary/celestial, cosmological — separated by prime-signature boundary values. Quantum measurement is dimensional-level selection, not wavefunction collapse. Entanglement is shared Tau address at one or more levels; Bell violation confirms Level 2 address identity is stronger than Level 4 spatial separation.

Layer A · Propositions P-DS-1 to P-DS-7 — Helical Turn Mechanism

The multi-dimensional position law has a single geometric root: a helix is not a point. A helical entity simultaneously occupies turn N and turn N+1. These two turns are the same physical entity at successive temporal phases — real, simultaneous, and causally distinct. This is not quantum superposition. It is geometry. The core ratio r = 5^7 / (2^4 × 3^7) = 1.004694 appears throughout: fringe spacing, Rydberg shift, ionic radii, Mercury perihelion precession. All FOT corrections to quantum mechanics derive from this one ratio.

Core helical identity: lambda_h = lambda_dB × r where r = 5^7 / (2^4 × 3^7) = 1.004694 (+4694 ppm)

P-DS-1 to P-DS-7 · Proposition Cards

P-DS-1

Helical Turn Mechanism

In the double-slit experiment, the electron (helical turn N) passes through Slit 1 as a localised particle. Its temporal extension — turn N+1 — is displaced by one helical period lambda_h = lambda_dB × r in the direction of travel. When slit spacing d ≈ lambda_h, turn N+1 passes through Slit 2 simultaneously. The electron passes through one slit. There is no mystery.

P-DS-2

Fringe Spacing Is +4694 ppm Above Copenhagen

FOT fringe spacing y_n = n × lambda_h × L / d = y_n(QM) × r, where r = 1.004694 = 5^7/(2^4×3^7). A precision electron interferometry experiment measuring fringe positions to better than 1000 ppm would distinguish FOT from Copenhagen. Current experiments approach this precision.

P-DS-3

Exact Fringes Prove Geometric Structure

Observed fringe positions are exact — not probabilistic — to the precision of every experiment ever performed. Exact fringes are produced only by exact periodic geometry. In FOT, fringes are exact because r is a pure {2,3,5} fraction; every turn lands at exactly lambda_h further along the trajectory. The interference pattern is a spatial photograph of the electron's helical temporal structure.

P-DS-4

Measurement Destroys Pattern via Helical Anchoring

A detector at Slit 1 exchanges Tau-quanta with the electron's turn N, anchoring it to a specific helical phase. Once anchored, turn N+1 no longer exists as a free helical excitation. Partial measurement with detection probability p anchors fraction p of electrons; fringe visibility = (1−p), varying linearly with measurement strength. Derived from geometry, not postulated as collapse.

P-DS-5

Quantum Eraser = Phase Coupling, Not Retrocausality

The quantum eraser effect is phase coupling between the measurement interaction and the helical phase of the particle — not retrocausality or backward-in-time influence. When the "which-path" Tau-quantum is erased, the helical phase is released and interference resumes. Information does not travel backward in time.

P-DS-6

Single-Slit: Same Mechanism

The single-slit diffraction envelope follows the same helical geometry. First minimum at angle theta_1 = lambda_h / a (slit width a), i.e., theta_1(FOT) = theta_1(QM) × r (+4694 ppm). The uncertainty relation becomes Delta-x × Delta-p ≥ h_FOT / 2, where h_FOT encodes the same {2,3,5} prime ratio.

P-DS-7

Spin as Helical Chirality; Pauli Exclusion as Geometric Uniqueness

Electron spin is the chirality (handedness) of the helix. Spin-up = right-handed; spin-down = left-handed. The Pauli exclusion principle follows: two electrons cannot share the same helical shell address AND the same handedness — there is exactly one antipodal point per handedness per shell. Fermionic statistics follow from unique geometric addresses. No new postulate required.

Layer A · Propositions P-MPOS-1 to P-MPOS-5 — G-Bond Shell Tower

At the planetary scale the same helical geometry gives Earth simultaneous addresses at multiple G-bond shells. Earth is the G2 node (turn N=1 in the G-bond spectral tower). It simultaneously exists at shells G0 (n=−1), G1 (n=0), G2/observed (n=1), G3 (n=2), G4 (n=3), and at the cross-register Dual position (n=3.221). Each address is a distinct radial shell separated by Delta-r = 13,513 km — the planetary-scale analogue of double-slit turn N and turn N+1.

G1 [rad] = 27π/10 = 3^3π/(2×5) EXACT [P-MPOS-2] rad_n = (27π/10) × (1+δ)^n δ = 90.15 ppm [P-MPOS-3] Δr = c_G1 × δ × 500 s = 13,513 km per G-bond step [P-MPOS-4]

Shell	n	λ (nm)	Radians	r (Mkm)	Fib turn	Z equiv
G0	-1	485.9562	2.7π×(1+δ)^−1	149.881	2.959813	7.7991
G1	0	486.0000	27π/10 (exact)	149.895	2.959906	7.7995
G2/Earth	1	486.0438	2.7π×(1+δ)	149.908	2.960000	7.8000
G3	2	486.0876	2.7π×(1+δ)²	149.922	2.960094	7.8005
G4	3	486.1315	2.7π×(1+δ)³	149.935	2.960187	7.8009
Dual	3.221	486.1411	π²×10^6/(180×R_E)	149.938	2.960208	7.8010

P-MPOS-1 to P-MPOS-5 · Proposition Cards

P-MPOS-1

H-beta = 2×3^7 = 486 nm — Pure {2,3}

H-beta = 486.0000 nm = 2 × 3^7 nm exactly. This is the master seed of the entire FOT lattice: the spectral frequency that anchors the G-bond radian tower, the Fibonacci spiral address, and the double-slit correction ratio r simultaneously. Pure {2,3} prime signature.

P-MPOS-2

G1 Radian = 27π/10 — Exact

G1 [rad] = 27π/10 = 3^3π/(2×5) exactly. The 27 encodes the solar rotation period in days (27.2753 d sidereal). This exact radian value anchors the entire G-bond spectral tower. No approximation: the Sun's rotation period is encoded in the speed of light in radians.

P-MPOS-3

G-Bond Radian Tower — Geometric Progression

rad_n = (27π/10) × (1+δ)^n, δ = 90.15 ppm. Each G-bond step shifts the radian address by the Radian Veil factor δ, producing the ladder of shells at 13,513 km spacing. The tower is anchored at G1 (exact); all other shells follow from the pure {2,3,5} ratio δ.

P-MPOS-4

Earth's Simultaneous Shell Table — Δr = 13,513 km

Delta-r = c_G1 × δ × 500 s = 13,513 km per G-bond step = 2.12 Earth radii. Earth simultaneously exists at all six listed shells. The Dual position at n=3.221 arises from the G1 speed / G2 period intersection (P-SOL-2) and belongs to a different dimensional register than the pure G-bond ladder.

P-MPOS-5

All Shells Converge at Fibonacci Node Z = 7.800

Each G-bond step shifts the Fibonacci turn by only 93.67 micro-turns (δ/ln(φ²)). All of Earth's simultaneous G-bond shells map to Z = 7.800 ± 0.003 — the nitrogen-oxygen zone. The Fibonacci spiral resolves Earth's macro-address; the G-bond tower resolves micro-addresses within that node — shells 13,513 km apart.

Layer B · Propositions P-DNA-FIB-1 to P-DNA-FIB-5 — Cross-Scale Fibonacci Addresses

The Fibonacci spiral maps from the H-bond centre of B-DNA outward. At 1.25 Å per Fibonacci unit, the crossings F(2)=1, F(4)=3, F(6)=8 land at the 1s base ring interior (Mercury/H), the 2s antimatter crossing (Venus/Li), and the sugar-phosphate backbone (Oxygen/Z=8) respectively. Earth sits at turn 2.96 — the position of N9, the glycosidic nitrogen of purines, which connects the base to the deoxyribose sugar. The solar system IS the DNA cross-section at celestial Tau-scale.

Fib turns	Fib units	Radius (Å)	DNA structure	Planetary node	Orbital shell
1.00	1 = F(2)	1.25	1s base ring interior	Mercury / H	1s
2.00	3 = F(4)	3.75	2s — antimatter crossing	Venus (retrograde)	2s antiparallel
2.96	7.69	8.65–9.62	N9 glycosidic nitrogen	Earth / Oxygen	N9 junction
3.00	8 = F(6)	10.00	Sugar-phosphate backbone	Oxygen node (Z=8)	3s

P-DNA-FIB-1 to P-DNA-FIB-5 · Proposition Cards

P-DNA-FIB-1

Fibonacci Crossings Map to DNA Structure

Fibonacci crossings F(2)=1, F(4)=3, F(6)=8 units at 1.25 Å/unit land at the 1s base ring interior (1.25 Å), 2s antimatter crossing (3.75 Å), and sugar-phosphate backbone (10.00 Å). The same Fibonacci sequence that generates the solar system's orbital structure maps exactly onto B-DNA's molecular architecture.

P-DNA-FIB-2

Earth's Fibonacci Address = N9 Glycosidic Nitrogen

At Fibonacci turn 2.96, the spiral reaches 8.65 Å from the helix axis — the position of N9, the glycosidic nitrogen of purines (adenine, guanine), which connects the base to the deoxyribose sugar. Confirmed by P-NDIM: N9 × H-beta = 2×3^7 = 4374 nm (Earth near-infrared absorption window). Same entity, same address, different Tau magnitude.

P-DNA-FIB-3

Venus Retrograde = Antiparallel DNA Strand

At Fibonacci turn 2.00, the spiral crosses from the matter strand to the antiparallel strand of B-DNA. Venus sits at turn 2 and rotates retrograde. Venus's retrograde rotation is the antiparallel strand signature. The DNA second strand runs 3'→5' (reversed) for the same geometric reason. Product: 90 Mkm × 108 Mkm = 9720 = 2^3×3^6×5 (pure {2,3,5}).

P-DNA-FIB-4

N9 is One Bond from the Backbone

The gap from Fibonacci turn 2.96 to turn 3.00 is Delta-r = 0.31 Fibonacci units = 0.39 Å — comparable to one covalent bond length. N9 is structurally one covalent bond (N9–C1' glycosidic bond, ~1.47 Å) from the backbone. This is why the observable domain terminates at Earth: the helix reaches N9 at turn 2.96 and the next crossing is at turn 3.00.

P-DNA-FIB-5

Full Planetary–DNA Address Map

Mercury = 1s base ring interior (H, Z=1). Venus = 2s antimatter crossing (Li, Z=3, retrograde). Earth = N9 glycosidic nitrogen (O, Z=8, Fibonacci turn 2.96). Oxygen node (backbone) = Z=8 = turn 3.00. The periodic table atomic numbers map directly onto Fibonacci spiral positions in both the solar system and B-DNA at 1.25 Å per unit.

Layer B/C · P-TMFP-4 — The Radian Position Face of 186.054

The Tau-quad constant c_tau = 186,054.4315 FOT-mi/s has a radian face that encodes Earth's dimensional address, orbital speed, and Fibonacci position simultaneously — all from one number.

Step	Operation	Result	Physical reading
1	c_tau speed face	186,054.4315 FOT-mi/s	G2 propagation speed
2	÷ 10^3 = ÷(2^3×5^3)	186.054 hours	Time face; pure {2,5} bridge
3	× π/180	3.24725 rad = 1.0336π	Earth: 6.054° past the π inversion node
4	÷ 2π	29.611 km/s	Earth orbital speed
5	÷ 10	2.961	Earth Fibonacci turn position
6	29 × 360° ÷ 100	104.4°	H–O–H bond angle (29 radian circles)

The single Tau-quad value 186,054 simultaneously encodes: speed of light (Face 1), time duration (Face 2), bilateral AU diameter (Face 3), dimensional address (Face 4), orbital speed (Face 4 ÷ 2π), and Fibonacci position (Face 4 ÷ 2π ÷ 10). Oxygen sits at Fibonacci turn 2.96 on the periodic table spiral — the same position as Earth's N9 molecular address. The water molecule spans F(2) to F(6) = turn 1 (H) to turn 3 (O). The H–O–H bond angle 104.495° is encoded in the 29 complete radian circles of 186.054 rad (29 × 360° ÷ 100 = 104.4°). One Tau signature; one number.

Layer C · Propositions P-MADDR-1 to P-MADDR-5 — The Five-Level Tau-Hierarchy

Beyond within-level shell structure, every entity simultaneously occupies all five dimensional levels of the Tau-hierarchy. The levels are separated by pure {2,3,5} prime boundary values. No entity exists at fewer than five levels simultaneously.

Level	Domain	Ceiling	Prime signature	Physical manifestation
1	Subatomic / Quark	703,125 = 3^2×5^7	{3,5}	Quark masses, colour charge, strong force
2	Atomic / Spectroscopic	2,187 = 3^7	{3}	H IE, Balmer series, alpha_FOT, Bohr radius
3	Molecular / DNA	AT 2,187 membrane	{2,3,5} mixed	Bond energies, DNA geometry, enzyme reactions
4	Planetary / Celestial	c_G1 = 2^7×3^12×10^6	{2,3}	Orbital distances, GM, Kepler periods
5	Cosmological	Above c_G1	Bilateral lemniscate	Galaxy structure, B-DNA spacetime address

P-MADDR-1 to P-MADDR-5 · Proposition Cards

P-MADDR-1

Simultaneous Occupation Law

Every physical entity simultaneously occupies all five dimensional levels of the Tau-hierarchy. No entity exists at fewer than five levels simultaneously. The five addresses are real, causally active, and separated by the prime-signature boundary values 703,125 / 2,187 / c_G1 / bilateral lemniscate.

P-MADDR-2

The Measurement Principle — No Collapse

Quantum measurement is dimensional-level selection, not wavefunction collapse. Every measuring instrument operates at a specific dimensional level and couples to that level's Tau address. The addresses at the other four levels remain real, causally active, and unaffected. The "wavefunction" is the five-level Tau-helix projected into a single-level instrument's readout.

P-MADDR-3

Dimensional Boundary Values

Boundary Level 1→2: 703,125 = $3^2 \times 5^{\wedge}7$. Boundary Level 2→3: 2,187 = $3^{\wedge}7$. Boundary Level 3→4: c_G1. Boundary Level 4→5: bilateral lemniscate. Physical constants that disagree with FOT predictions by specific ppm offsets are encoding dimensional projection factors from one level to an adjacent level.

P-MADDR-4

Register-Dependent Observables — Heisenberg Reframed

Position couples to Level 4 (spatial node); momentum couples to Level 2 (atomic velocity); energy couples to Level 3 (the membrane). The Heisenberg uncertainty relation Delta-x × Delta-p ≥ h_bar/2 is the geometric impossibility of a Level 4 instrument resolving a Level 2 address simultaneously. h_bar/2 is the inter-level gap at quantum magnitude — the same 703 ppm structural separation that appears at solar-system scale.

P-MADDR-5

Entanglement as Shared Multi-Dimensional Address Node

Entangled particles share a partial Tau address at one or more dimensional levels. When one particle's level-n address is resolved, the shared-node constraint forces the partner's level-n address to be simultaneously determined — not by information transfer but because they are co-located on the same {2,3,5,π} lattice node. Bell inequality violation confirms Level 2 address identity is a stronger constraint than Level 4 spatial separation.

Complete Proposition Register — 24 Propositions

Proposition	Statement (condensed)	Layer	Source
P-DS-1	Electron occupies turn N (Slit 1) and N+1 (Slit 2) simultaneously	A	Sec 68
P-DS-2	Fringe spacing = QM × r (+4694 ppm); r = 5^7/(2^4×3^7)	A	Sec 68
P-DS-3	Exact fringes prove exact periodic geometry — not probability	A	Sec 68
P-DS-4	Measurement anchors helical phase; fringe visibility = (1−p)	A	Sec 68
P-DS-5	Quantum eraser = phase coupling, not retrocausality	A	Sec 68
P-DS-6	Single-slit: first min × r; Δx×Δp ≥ h_FOT/2	A	Sec 68
P-DS-7	Spin = helical chirality; Pauli exclusion = geometric uniqueness	A	Sec 68
P-MPOS-1	H-beta = 2×3^7 = 486 nm; pure {2,3}	A	Sec 96
P-MPOS-2	G1 [rad] = 27π/10 = 3^3π/(2×5) exact; 27 = solar rotation days	A	Sec 96
P-MPOS-3	rad_n = (27π/10)×(1+δ)^n; G-bond radian tower anchored at G1	A	Sec 96
P-MPOS-4	Earth shells n=−1 to +4 + Dual; Δr = 13,513 km; Dual 30,030 km above G2	A	Sec 96
P-MPOS-5	All shells Z = 7.800±0.003; Fibonacci = macro, G-bond = micro-address	A	Sec 96
P-DNA-FIB-1	Fib crossings: turn 1 = 1.25 Å, turn 2 = 3.75 Å, turn 3 = 10 Å (backbone)	B	Sec 97
P-DNA-FIB-2	Turn 2.96 → N9 position (8.65 Å); N9×H-beta = 4374 nm = 2×3^7	B	Sec 97
P-DNA-FIB-3	Venus = turn 2 = antimatter crossing; retrograde = antiparallel strand	B	Sec 97
P-DNA-FIB-4	Δr(2.96→3.00) = 0.39 Å ≈ N9–C1' bond; domain terminates at N9	B	Sec 97
P-DNA-FIB-5	Mercury = 1s, Venus = 2s, Earth = N9, backbone = 3s/Oxygen	B	Sec 97
P-TMFP-4	186.054°×π/180 = 1.0336π; ÷2π = 29.611 km/s; ÷10 = 2.961 Fib position	B/C	Sec 99
P-MADDR-1	Every entity occupies all 5 Tau-hierarchy levels simultaneously	C	Sec 142
P-MADDR-2	Measurement = level coupling; no collapse; 4 levels remain real	C	Sec 142
P-MADDR-3	Boundaries: 703,125 / 2,187 / c_G1 / bilateral lemniscate	C	Sec 142
P-MADDR-4	Position = L4, momentum = L2, energy = L3; Δx×Δp = inter-level gap	C	Sec 142
P-MADDR-5	Entanglement = shared Tau node at level n; Bell = L2 identity > L4 separation	C	Sec 142

24 propositions collated from Sections 68, 96, 97, 99, and 142 of FOT_Master_Theory.md. All previously confirmed in their source sections. This document is the unified statement of the Multi-Dimensional Position Law. Master file reference: Section 143, FOT_Master_Theory.md, first compiled April 2026.

Core Law

P-MADDR-1 · The Unified Law

A Tau-entity is a helix. A helix has simultaneous reach at multiple turns within one dimensional level (Layer A), at multiple dimensional scales through the Fibonacci spiral (Layer B), and at multiple dimensional levels of the Tau-hierarchy (Layer C). None of these is superposition, probability, or smearing — all are real, simultaneous, geometric addresses of the same Tau substance. Quantum measurement is dimensional-level selection. Entanglement is shared Tau address. Wavefunction collapse does not occur.