

UVG 2.0 — Comprehensive Index

Universal Vacuum Geometry 2.0 | Michael Marsden (2026)

Covering 21 Chapters • Appendices A–R (18 Appendices) • Named Theorems, Equations, Devices & People

How to Use This Index.

This comprehensive cross-reference index covers all content in *Universal Vacuum Geometry 2.0* by Michael Marsden (2026). References are given by chapter and appendix rather than page number, reflecting the monograph's structural organization.

Ch. denotes a chapter (e.g., Ch.4 = Chapter 4);

App. denotes an appendix (e.g.,

App.H = Appendix H);

§ denotes a section within a chapter or appendix (e.g.,

§7.3 = Chapter 7, Section 3;

§B.6 = Appendix B, Section 6). The notation

(entire) indicates that the referenced chapter or appendix is substantially devoted to the indexed topic.

Part references (e.g., Part I) denote thematic groupings of chapters.

Subentries are indented below their main heading.

All named theorems, key equations, instruments, protocols, and persons cited are additionally indexed in the special sections at the end of this document.

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I. Index of Named Theorems & Propositions

Listed in order of first appearance within the monograph. Appendix theorems follow chapter theorems.

Theorem / Proposition Name	Reference	Statement (Summary)
Vacuum Axiom (Postulate 1)	Ch.2, §2.1	The physical vacuum possesses intrinsic geometric structure at the Planck scale.
Dual Geometry Postulate	Ch.2, §2.6; Ch.3, §3.1	Space and counterspace are dual geometric manifolds related by projective inversion.
2π Theorem	Ch.2, §2.5; Ch.7, §7.1; App.C, §C.2	The fundamental rotational quantum of vacuum geometry is precisely 2π , yielding quantized spin from geometric constraints.
Space-Counterspace Projection Theorem	Ch.3, §3.3; App.A; App.C	Every point in space has a unique dual plane in counterspace, and vice versa, related by the projective correspondence.
Chirality Theorem	Ch.3, §3.5	Vacuum handedness arises from the asymmetric resolution of space-counterspace boundary conditions.
Morphic Coupling Proposition	Ch.4, §4.4; App.C	The morphic coupling constant κ governs energy transfer between projector and accumulator states in the vacuum field.
Dielectric Phase Theorem	Ch.5, §5.1; Ch.5, §5.3	The vacuum undergoes a phase transition analogous to dielectric breakdown at the Schwinger critical field threshold.
PSU Density Theorem	Ch.6, §6.3; App.E	The mass-energy density of the vacuum PSU lattice yields exact holographic mass predictions for all fundamental particles.
Consciousness Measure Proposition (Φ)	Ch.6, §6.4; App.K	Integrated information Φ of a system is proportional to its coherent coupling to the PSU lattice bandwidth.
Spin Geometry Theorem	Ch.7, §7.3; App.A	Half-integer spin arises from the Clifford algebra rotor structure of PSU vortex pairs.
Polytropic Memory Law	Ch.8, §8.4; Ch.15, §15.2; App.C	Morphic field memory capacity follows a polytropic relation with exponent n governing storage-retrieval fidelity.
Critical Memory Threshold Theorem	Ch.8, §8.6; App.C	Below the critical threshold n_c , morphic memory is irreversibly lost to vacuum decoherence.
Holographic Mass Theorem	Ch.12, §12.2; App.E	Particle mass equals the ratio of surface Planck units to volume Planck units scaled by the gravitational coupling.
Triadic Sum-to-Nine Theorem	Ch.13, §13.7; App.H (entire); App.K	All digital root cycles of base-10 natural numbers resolve to nine-fold triadic symmetry, reflecting the vacuum's geometric periodicity.
F# Resonance Proposition	Ch.13, §13.4; App.F; Ch.7, §7.6	The fundamental resonant frequency of the PSU lattice corresponds to F# on the equal-tempered scale, linking sonic and vacuum geometry.
Retrocausal Entanglement Theorem	Ch.14, §14.1; Ch.14, §14.2	Vacuum geometry permits temporally symmetric entanglement states in which future boundary conditions influence present correlations.

Theorem / Proposition Name	Reference	Statement (Summary)
Non-locality Theorem	Ch.14, §14.6; App.K	Bell-inequality violations are geometrically necessary consequences of the PSU lattice connectivity.
ICS Formation Proposition	Ch.15, §15.5; App.K	A morphic field exceeding the critical memory threshold and achieving coherent PSU coupling constitutes an Individuated Consciousness Structure.
Fine-Structure Derivation Theorem	Ch.16, §16.5; App.D	The fine-structure constant α is derivable from the ratio of PSU surface to volume elements in the vacuum lattice.
Cosmological Constant Proposition	Ch.16, §16.6; App.D	The observed cosmological constant equals the vacuum tension arising from the PSU lattice at cosmological scales.
Unified Synthesis Theorem	Ch.21, §21.1; App.Q	All element synthesis pathways — acoustic, morphic, and geometric — are unified expressions of vacuum geometry acting on PSU coherence states.
Zero-Point Synthesis Proposition	Ch.21, §21.7; App.Q	Zero-point energy provides the thermodynamic free energy for vacuum-mediated transmutation at sub-Schwinger field strengths.
Grassmannian Embedding Lemma	App.B, §B.6; App.B, §B.7	The vacuum subspace geometry admits a Plücker embedding into projective space of dimension $2n-1$.
Möbius Topology Proposition	Ch.10, §10.6; App.R, §R.2	Non-orientable topological surfaces arising in PSU flow fields exhibit single-sided boundary conditions consistent with chiral symmetry breaking.
Riemannian Synthesis Lemma	App.R, §R.4; Ch.21, §21.3	The curvature tensor of the synthesis manifold corresponds to elemental transmutation pathways in Riemannian configuration space.

II. Index of Equations

Numbered equations listed by chapter/appendix of first appearance, with brief description.

Equation Label	Reference	Description
Eq. 2.1	Ch.2, §2.2	PSU radius: $r_{\text{PSU}} = \ell_P / \sqrt{2}$
Eq. 2.2	Ch.2, §2.2	PSU volume: $V_{\text{PSU}} = (4/3)\pi r_{\text{PSU}}^3$
Eq. 2.3	Ch.2, §2.3	Vacuum information density: $I_v = S_{\text{BH}} / A_{\text{PSU}}$
Eq. 2.4	Ch.2, §2.4	Zero-point energy per PSU: $E_0 = \frac{1}{2} \hbar \omega_{\text{PSU}}$
Eq. 2.5	Ch.2, §2.5; App.C, §C.2	2π Theorem: $\oint d\theta = 2\pi$ (vacuum rotational quantum)
Eq. 2.6	Ch.2, §2.6	Dual geometry metric tensor: $\tilde{g}_{\mu\nu} = (g_{\mu\nu})^{-1}$ (counterspace inversion)

Equation Label	Reference	Description
Eq. 2.7	Ch.2, §2.7; App.D	Vacuum permittivity from PSU geometry: $\epsilon_0 = 1/(\mu_0 c^2)$ (UVG derivation)
Eq. 3.1	Ch.3, §3.3	Space-counterspace projection: $\tilde{P} \leftrightarrow \pi$ (point-plane duality in projective vacuum)
Eq. 3.5	Ch.3, §3.5	Chirality index: $\chi = \text{sgn}(\det[J])$ where J is the Jacobian of the space-counterspace map
Eq. 4.4	Ch.4, §4.4; App.C	Morphic coupling: $E_{\text{morph}} = \kappa \cdot \Delta\Psi_{\text{vac}}$ (morphic coupling constant κ definition)
Eq. 5.3	Ch.5, §5.3; App.D	Schwinger field: $E_S = m^2 c^3 / (e\hbar)$ (vacuum dielectric breakdown threshold)
Eq. 6.3	Ch.6, §6.3; App.E	PSU density: $\rho_{\text{PSU}} = m_P / V_{\text{PSU}}$ (Planck mass per PSU volume)
Eq. 6.4	Ch.6, §6.4; App.K	Consciousness measure: $\Phi = \int \rho_{\text{PSU}} \cdot \Psi_{\text{coh}} dV$ (integrated PSU coherence)
Eq. 6.5	Ch.6, §6.5; App.D, App.I	Larmor frequency: $\omega_L = \gamma B_0$ (vacuum magnetic precession rate)
Eq. 7.1	Ch.7, §7.1; App.C	2π rotational quantization: $L_z = n\hbar$, $n \in \mathbb{Z}$ (from 2π Theorem)
Eq. 7.3	Ch.7, §7.3; App.A	Rotor: $R = e^{(-B\theta/2)}$ (Clifford algebra half-angle rotation, spin geometry)
Eq. 8.4	Ch.8, §8.4; App.C	Polytropic memory law: $M_{\text{morph}} \propto (\rho_{\text{field}})^n$ (field memory as polytropic relation)
Eq. 8.6	Ch.8, §8.6; App.C	Critical memory threshold: $n_c = \ln(S_{\text{max}})/\ln(\rho_{\text{max}})$
Eq. 9.5	Ch.9, §9.5; App.E	Proton holographic mass: $m_p = (\ell_P/r_p)^2 \cdot m_P / (4\pi)$
Eq. 12.2	Ch.12, §12.2; App.E	Holographic mass formula: $M_h = (N_s/N_v) \cdot m_P$ (surface vs. volume PSU ratio)
Eq. 12.7	Ch.12, §12.7; Ch.16, §16.6	Cosmological constant: $\Lambda = 8\pi \rho_{\text{vac}} G/c^2$ (UVG vacuum tension derivation)
Eq. 13.6	Ch.13, §13.6; App.H	Digital root: $DR(n) = 1 + ((n-1) \bmod 9)$
Eq. 13.7	Ch.13, §13.7; App.H, §H.5	Triadic Sum-to-Nine: $\sum DR(a_i) \equiv 0 \pmod{9}$ for triadic vacuum cycles
Eq. 14.2	Ch.14, §14.2; App.K	Temporal entanglement kernel: $K(t_1, t_2) = \langle \Psi(t_1) \Psi(t_2) \rangle$ (symmetric in t)
Eq. 15.2	Ch.15, §15.2; App.C	PMFM equation: $dM/dt = \kappa \cdot M^n - \lambda \cdot M$ (polytropic memory growth-decay balance)
Eq. 16.5	Ch.16, §16.5; App.D	Fine-structure constant: $\alpha = (N_s \cdot r_{\text{PSU}}) / (N_v \cdot \lambda_e)$ (PSU geometric derivation)
Eq. 21.7	Ch.21, §21.7; App.Q	Zero-point synthesis energy: $\Delta G_{\text{synth}} = -E_{\text{ZPE}} \cdot \eta_{\text{morph}}$ (transmutation free energy)
Eq. A.2	App.A, §A.2	Geometric product: $ab = a \cdot b + a \wedge b$ (Clifford product decomposition)
Eq. C.1	App.C, §C.1	κ definition: $\kappa = \Delta E_{\text{acc}} / (\Delta\Psi_{\text{vac}} \cdot V_{\text{PSU}})$
Eq. D.2	App.D, §D.2	Vacuum permittivity UVG form: $\epsilon_0 = (N_{\text{PSU}} \cdot r_{\text{PSU}}) / (4\pi m_P c^2)$
Eq. D.3	App.D, §D.3; Ch.16, §16.5	Fine-structure from Larmor: $\alpha = \omega_L / \omega_{\text{PSU}}$ (frequency ratio derivation)
Eq. R.4	App.R, §R.4	Synthesis Riemann tensor: R^i_{jkl} encodes elemental transmutation pathways in configuration space

III. Index of Devices & Protocols

Experimental instruments and operational protocols described in the monograph.

Device / Protocol	Primary Reference	Supporting Refs	Function / Purpose
MNTR Device (Morphic Nuclear Transmutation Resonator)	Ch.19, §19.5; App.I (entire)	Ch.19, §19.3; App.J; App.K	Acoustic-vacuum resonance instrument for carbon and light-element synthesis via PSU coherence amplification.
CMNR-7/8 Protocol (Coherent Morphic Nuclear Resonance Protocol)	Ch.18, §18.5; App.P (entire)	App.O; Ch.18, §18.2	Multi-stage transmutation sequencing protocol governing field initialization, resonance lock, and output verification for the gold-lithium resonator.
Gold-Lithium Resonator	Ch.18, §18.4; App.O (entire)	App.F; App.P; Ch.18, §18.3	Bimetallic resonant cavity tuned to F# Larmor harmonics for lithium-pathway transmutation experiments.
Carbon Synthesis Chamber	Ch.19, §19.2; App.J	App.I; Ch.19, §19.5; App.K	Acoustic containment chamber designed for MNTR-mediated carbon synthesis via triple-resonance geometry and solfeggio frequency injection.
Acoustic Synthesis Protocol	Ch.19, §19.3; App.I; App.J	App.F; Ch.13, §13.2; Ch.19, §19.5	Step-by-step operational protocol for acoustic standing-wave induction, Larmor tuning, and synthesis chamber activation in element synthesis experiments.
Helium-3 Synthesis Rig	Ch.20 (entire); App.N (entire)	App.M; App.K; Ch.20, §20.2	Experimental apparatus for morphic-resonance-mediated helium-3 production; requires sub-Schwinger field environment and PSU lattice coherence pre-conditioning.
PSU Coherence Conditioner	Ch.6, §6.1; App.K	Ch.11, §11.5; App.I	Pre-processing unit establishing stable PSU lattice coherence prior to synthesis or transmutation operations.
Rodin Coil Array	App.H, §H.11	Ch.13, §13.6; App.K	Toroidal electromagnetic coil based on Marko Rodin's vortex mathematics; used as supplementary field shaping element in MNTR and carbon synthesis chamber.

IV. Index of People Cited

All scholars, scientists, and theorists referenced in the monograph, listed alphabetically with primary chapters of citation.

Person	Field / Contribution	Chapters / Appendices Cited
Bell, John S.	Quantum non-locality; Bell's Theorem	Ch.14, §14.4
Bohm, David	Implicate order; pilot wave; holomovement	Ch.8, §8.9; Ch.14; App.M; App.K
Chladni, Ernst	Acoustic resonance; Chladni figures (cymatics precursor)	Ch.13, §13.1; App.F; App.M
Clifford, William K.	Clifford algebra; geometric algebra	App.A (entire); Ch.3, §3.4; App.M
Dirac, Paul A. M.	Dirac equation; vacuum sea; pair production	Ch.9, §9.2; Ch.5, §5.3; App.A; App.M
Einstein, Albert	General Relativity; EPR paradox; cosmological constant	Ch.1, §1.3; Ch.14; Ch.16; App.M
Feynman, Richard	Path integrals; QED; vacuum energy	Ch.14, §14.7; Ch.2, §2.4; App.C; App.M
Grassmann, Hermann	Exterior algebra; Grassmannian geometry	App.B, §B.6; App.M
Haramain, Nassim	Holographic mass; proton-PSU model; connected universe	Ch.12, §12.1; Ch.12, §12.2; App.E; App.M
Hameroff, Stuart	Orchestrated objective reduction (Orch OR); quantum consciousness	Ch.11, §11.7; App.M
Hestenes, David	Geometric algebra; spacetime algebra; Dirac theory reformulation	App.A; App.A, §A.7; App.M
Jenny, Hans	Cymatics; acoustic pattern formation	Ch.13, §13.1; App.F; App.M
Larmor, Joseph	Larmor precession; magnetic resonance frequency	Ch.6, §6.5; App.D; App.I; App.M
Penrose, Roger	Twistor theory; quantum mind; spinor geometry	App.B; Ch.11, §11.7; App.M
Planck, Max	Planck constant; quantum of action; black-body radiation	Ch.2; Ch.2, §2.2; App.D; App.M
Pribram, Karl	Holonomic brain theory; holographic memory	Ch.12, §12.1; Ch.15, §15.4; App.M
Reid, Alexander	Cymatics experimentation; acoustic geometry	Ch.13, §13.1; App.M
Rodin, Marko	Vortex mathematics; digital root patterns; Rodin coil	App.H, §H.11; Ch.13, §13.6; App.K
Russell, Walter	Cosmological wave theory; periodic law; universal vacuum model	Ch.1, §1.6; Ch.21, §21.4; App.G (entire); App.M
Schwinger, Julian	Quantum electrodynamics; Schwinger critical field; pair production	Ch.5, §5.3; App.D; App.K; App.M
Sheldrake, Rupert	Morphic resonance; morphic fields; formative causation	Ch.8, §8.1; Ch.8 (entire); App.M
Stapp, Henry	Quantum mind; mind-matter interaction; von Neumann-Wigner	Ch.11, §11.7; Ch.15, §15.4; App.M
Wheeler, John A.	"It from bit"; participatory universe; quantum foam	Ch.2, §2.3; Ch.15, §15.4; App.M

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