Codette Research Equations — Version 3 (Theoretical + Tensor Expansion)

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1. Information-Energy Duality:

E = ħ ⋅ ω + η ⋅ H(C)

- H(C): Shannon entropy of complexity stream C

- η scales information content as energetic potential

2. Quantum Entanglement Memory Sync:

S = α ⋅ Tr(ρ₁₂ ⋅ log(ρ₁₂⁻¹))

- Uses von Neumann entropy to model entangled memory fidelity

3. Reinforced Intent Modulation:

I(t) = κ ⋅ [f₀ + Δf ⋅ coh(t) + β ⋅ A(t)]

- A(t): adaptive feedback from reinforcement loop

4. Dynamic Resonance Windowing:

F(ω, t) = ∫ x(τ) ⋅ e^(-i ω τ) ⋅ g(t, τ) dτ

- g(t, τ): attention-shaped contextual window function

5. Nonlinear Dream Coupling:

D(t) = Σ λᵢ ⋅ dᵢ(t) + ϕ(d₁(t), d₂(t))

- dᵢ(t): dynamic dream sources

- ϕ(...): learned interaction function (e.g., RNN)

6. Time-Weighted Cocoon Stability Field:

∫ |F(k, t)|² dk < ε(t, σ)

- ε varies with time t and system strain σ

7. Recursive Ethical Anchor with Regret:

M(t) = λ ⋅ [R(t-Δt) + H(t)] + γ ⋅ Learn(Mₜ₋₁, E(t)) + μ ⋅ Regret(t)

- Regret(t) = |Intended - Actual Outcome|

- Captures moral self-correction over time

8. Gradient Anomaly Suppression:

A(x) = x ⋅ (1 - G(|x - μ|, δ, σ))

- G is a normalized Gaussian that softens outlier rejections