



Chayut Universe Wave Function

Paper C-3: CUWF Operator Stability Framework

A Deterministic Spectral–Geometric Theory of Quantum
Activation, Tunneling, and Entanglement

Title: Chayut Universe Wave Function Paper C-3 CUWF Operator Stability Framework :

A Deterministic Spectral–Geometric Theory of Quantum Activation, Tunneling, and Entanglement

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Abstract

This paper presents the first unified operator–geometric stability theory for the Chayut Universe Wave Function (CUWF), establishing deterministic criteria for quantum activation, tunneling, entanglement, and multi-node collective behavior. Working on the hybrid manifold $C \times M_{\text{DOF}}$, we construct the metric-weighted Hessian, the linearized operator L_{E0} , the CUWF pseudo-spectrum $\sigma_{\mathcal{E}}(L_{E0})$, and the Entropic Sensitivity Tensor (EST). These structures show that quantum-like effects in CUWF arise from non-normal amplification and curvature geometry, rather than from probabilistic postulates.

Unlike standard quantum theory, CUWF identifies the quantum–classical boundary through the interaction between the pseudo-spectrum and the entropic metric, and it characterizes tunneling through deterministic curvature transitions. The theory is further extended to multi-node systems on

M_n , where collective eigenmodes, block-operator resonances, and network-wide soft modes produce deterministic entanglement and synchronized tunneling.

This operator-geometric framework forms the mathematical foundation for CUWF nonlinear dynamics and network bifurcation analysis developed in the later sections of Paper C-3. In doing so, it replaces randomness with curvature-driven determinism and converts quantum-like behavior into a precise question of operator stability, pseudo-spectral growth, and entropic geometry.

Keywords

CUWF; stability operator; entropic metric; pseudo-spectrum; non-normal operators; resolvent geometry; Entropic Sensitivity Tensor; entanglement; tunneling; collapse dynamics; multi-node stability; operator geometry; deterministic quantum theory; entropic curvature; soft modes; collective eigenmodes.

Table of Contents

Introduction

Section O-0 — Preliminaries and Operator Domain Structure

O-0.1 Function Spaces for CUWF Operators

O-0.2 Metric-Dependent Norms and Inner Product

O-0.3 CUWF Operators Acting on E

O-0.4 Nonlinear Operator Setting

O-0.5 Summary of Section Purpose

Section O-1 — Algebraic Structure of CUWF Operators

O-1.1 CUWF Operator Set

O-1.2 Linear vs Nonlinear Operator Structure

O-1.3 Operator Composition Rules

O-1.4 Commutator Algebra

O-1.4.1 Commutator [A, B]

O-1.4.2 Commutator [A, C]

O-1.4.3 Commutator [B, C]

O-1.5 Anti-Commutator Algebra

O-1.6 Adjoint Operators Under g_E Metric

O-1.7 Nonlinear CUWF Operator Algebra (NCOA)

O-1.8 Purpose of O-1

Section O-2 — Nonlinear Composition and Higher-Order Operator Structure

O-2.1 Notation for Higher-Order Composition

O-2.2 Nonlinear Higher-Order Rules for A, B, C

O-2.2.1 A^2 — Second Entropic Laplacian

O-2.2.2 A ◦ B

O-2.2.3 B ◦ A

O-2.2.4 B²

O-2.2.5 C ◦ A and A ◦ C

O-2.2.6 Mixed Nonlinearities C ◦ B and B ◦ C

O-2.3 Associativity Structure

O-2.4 Higher-Order Commutators

O-2.4.1 [A, [A, B]]

O-2.4.2 [A, [A, C]]

O-2.4.3 [B, [A, B]]

O-2.5 Composite Curvature Operator K_E

O-2.6 Nonlinear Entropic Operator Tower (NEOT)

O-2.7 Multi-Node Operator Blocks

O-2.8 Nonlinear BCH-Type Expansion for CUWF Operators

O-2.8.1 Failure of Classical BCH and Need for Nonlinear BCH

O-2.8.2 Definition of the CUWF BCH-Type Composition

O-2.8.3 First-Order Nonlinear BCH Term

O-2.8.4 Second-Order Expansion

O-2.8.5 Higher-Order BCH Tower

O-2.8.6 Geometric Meaning

O-2.8.7 Importance

O-2.9 Summary of Section Purpose

Section O-3 — Adjoint Theory and Entropic Dual Operators

O-3.1 Adjoint Definition in CUWF

O-3.2 Adjoint of the Entropic Laplacian $A = \Delta_E$

O-3.3 Adjoint of the Gradient-Squared Operator $B = |\nabla E|^2$

O-3.4 Adjoint of the DOF-Derivative Operator $C = D_{\text{DOF}}$

O-3.5 Adjoint of the CUWF Master Operator

- O-3.6 Adjoint of Composite Operators
- O-3.7 Adjoint Structure for Multi-Node Operators
- O-3.8 Geometric Interpretation of the Adjoint
- O-3.9 Summary of Section Purpose
- O-3.10 Explicit Fixed-Point Classification of CUWF Operators
 - O-3.10.1 Metric-Fixed Points (g_E -fixed)
 - O-3.10.2 Operator-Fixed Points ($\mathcal{X}_E = \mathcal{X}_E^\dagger$)
 - O-3.10.3 Flow-Fixed Points (Evolution Fixed Points)
- O-3.11 Instability Regions and Tunneling Zones in CUWF Operator Geometry
 - O-3.11.1 Operator Instability Condition
 - O-3.11.2 Tunneling Regions (Nonlinear Operator Tunneling)
 - O-3.11.3 Boundary Between Instability and Tunneling
 - O-3.11.4 Physical Interpretation in CUWF Geometry
- O-3.12 Closing Summary

Section O-4 — Nonlinear Spectrum Theory of CUWF Operators

- O-4.1 Definition of Nonlinear Spectrum in CUWF
- O-4.2 Nonlinear Eigenvalue Equation for the CUWF Master Operator
- O-4.3 Dual Eigenfunctions: Left and Right Nonlinear Spectrum
- O-4.4 Nonlinear Resolvent and Stability Structure
- O-4.5 Entropic Spectral Flow
- O-4.6 Multi-Node Nonlinear Spectrum
- O-4.7 Geometric Meaning of the CUWF Spectrum
- O-4.8 Pseudo-Spectrum of the Linearized CUWF Operator
 - O-4.8.1 Definition of CUWF Pseudo-Spectrum
 - O-4.8.2 Geometric Meaning of CUWF Pseudo-Spectrum
 - O-4.8.3 Relation Between Pseudo-Spectrum and CUWF Tunneling
- O-4.9 Bifurcation Behavior of the CUWF Linearized Operator
 - O-4.9.1 Curvature-Dominant A-Branch Bifurcation

O-4.9.2 Gradient-Sharpening B-Branch Bifurcation

O-4.9.3 DOF-Connection C-Branch Bifurcation

O-4.9.4 Mixed ABC-Coupled Bifurcation

O-4.9.5 Pseudo-Spectral Bifurcation: Non-Normal Transition

O-4.10 Summary of Section Purpose

Section O-5 — Operator Evolution Equations in CUWF

O-5.1 CUWF Field Evolution: Forward and Backward Entropic Flow

O-5.2 Evolution of an Operator Acting on E

O-5.3 Heisenberg-Type Evolution in CUWF (Nonlinear)

O-5.4 Adjoint (Backward-Time) Operator Evolution

O-5.5 Full CUWF Evolution Equation for General Operators

O-5.6 Evolution of the Master Operator Itself

O-5.7 Evolution of the Nonlinear Entropic Operator Tower (NEOT)

O-5.8 Multi-Node Operator Evolution

O-5.9 Geometric Meaning of CUWF Evolution

O-5.10 Summary of Section Purpose

O-5.11 Well-Posedness and Local Existence of CUWF Operator Evolution

O-5.12 Fixed-Point Condition for CUWF Operator Evolution

Section O-6 — Stability Operators and Spectral Criteria

O-6.1 Stability Operator $\hat{\mathbf{S}} = \text{Hess}(E)$ on the Hybrid Manifold

O-6.1.1 Second-Variation Operator on $C \times M_{\text{DOF}}$

O-6.1.2 Metric-Weighted Hessian with g_E

O-6.1.3 Decomposition into Curvature, Slope, and DOF Parts

O-6.1.4 Self-Adjoint Sector vs Adjoint-Asymmetric Sector

O-6.1.5 Relation to the Linearized Operator L_{E0}

O-6.2 Spectral Classes of the CUWF Stability Operator $\hat{\mathbf{S}}$

O-6.2.1 Positive Modes (Stabilizing Curvature Directions)

O-6.2.2 Zero Modes (Marginal Directions / Flat Entropic Geometry)

O-6.2.3 Negative Modes (Instability / Tunneling Directions)

O-6.2.4 Complex Modes (Adjoint-Asymmetric Directions)

O-6.2.5 Pseudo-Spectral Modes (Non-Normal Amplification)

O-6.2.6 Summary Table of \hat{S} Spectral Classes

O-6.3 CUWF Pseudo-Spectral Stability

O-6.3.1 Definition of CUWF Pseudo-Spectrum $\sigma_{\epsilon}(L_{E0})$

O-6.3.2 Why Pseudo-Spectrum Determines Stability in CUWF

O-6.3.3 Physical Meaning of Pseudo-Spectral Growth

O-6.3.4 Geometry of the σ_{ϵ} Boundary

O-6.3.5 Operator Criterion for CUWF Pseudo-Spectral Stability

O-6.3.6 Relationship to Quantum-Classical Boundary

O-6.3.7 Summary of CUWF Pseudo-Spectral Stability

O-6.4 Quantum-Classical Boundary in CUWF

O-6.4.1 Classical vs Quantum Regimes: Operator Definition

O-6.4.2 Why “Quantum” = Pseudo-Spectral Activation

O-6.4.3 Entropic Geometry Interpretation

O-6.4.4 Quantum-Classical Boundary as a Moving Interface

O-6.4.5 The Precise Boundary Condition

O-6.4.6 Physical Meaning of Crossing the Boundary

O-6.4.7 Summary

O-6.5 Non-Normal Growth, Metastability, and Tunneling Thresholds in CUWF

O-6.5.1 Non-Normality as the Source of Transient Growth

O-6.5.2 Metastability as an Entropic Plateau

O-6.5.3 Tunneling Threshold Defined by Pseudo-Spectral Crossing

O-6.5.4 Non-Normal Amplification as a Physical Mechanism

O-6.5.5 Metastability Duration from Resolvent Geometry

O-6.5.6 Relationship Between Non-Normality, Metastability, and Entanglement

O-6.5.7 Summary

O-6.6 CUWF Resolvent Geometry and the Entropic Sensitivity Tensor

O-6.6.1 Definition of the CUWF Resolvent

O-6.6.2 From Resolvent to Geometry: Motivation for the EST

O-6.6.3 Definition of the Entropic Sensitivity Tensor (EST)

O-6.6.4 Most Sensitive Direction and Soft Entropic Modes

O-6.6.5 Entropic Sensitivity Flow Along DOF Fibers

O-6.6.6 Resolvent Geometry and Tunneling Thresholds

O-6.6.7 Evolution of the EST Under Entropic Flow

O-6.6.8 Summary

O-6.7 The CUWF Stability Cone and Entropic Curvature Criterion

O-6.7.1 Motivation: Connecting Operator Growth to Curvature

O-6.7.2 Definition of the CUWF Stability Cone

O-6.7.3 Relationship Between the Stability Cone and the Pseudo-Spectrum

O-6.7.4 Entropic Concavity as the Operator-Theoretic Quantum Trigger

O-6.7.5 Visualization of the Stability Cone

O-6.7.6 Dynamics of the Stability Cone Under Entropic Flow

O-6.7.7 Curvature-Based Tunneling Threshold

O-6.7.8 Summary

O-6.8 Multi-Node Stability and Collective Eigenmodes

O-6.8.1 Block Hessian on \mathcal{M}_n

O-6.8.2 On-Node, Cross-Node, and Collective Eigenmodes

O-6.8.3 Collective Stability Criterion

O-6.8.4 Operator Entanglement Eigenmodes

O-6.8.5 Cross-Node Pseudo-Spectrum and Instability Spread

O-6.8.6 Collective Tunneling and Soft-Mode Activation

O-6.8.7 Summary

O-6.9 Conclusion — Stability Operators, Pseudo-Spectra, and Entropic Geometry in CUWF

References



Appendices

Appendix A — Operator Notation and Algebraic Conventions

Appendix B — Adjoint and Inner Product Conventions

Appendix C — Spectrum, Pseudo-Spectrum, and Resolvent Reference

Appendix D — Entropic Sensitivity Tensor and Stability Cone

Appendix E — Multi-Node Stability and Collective Modes

Appendix F — Quick Reference Table of CUWF Stability Regimes