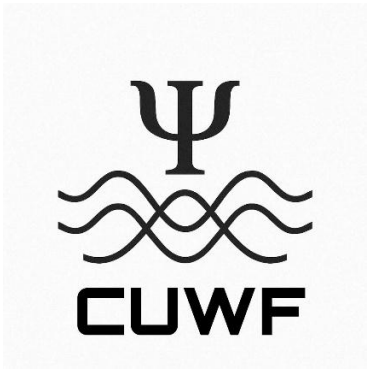


# Chayut Universe Wave Function

## 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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**Date:** 26 December 2025

## 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 × M_DOF, we construct the metric-weighted Hessian, the linearized operator L_E0, the CUWF pseudo-spectrum $\sigma_\varepsilon(L_{E0})$, 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.

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