



# Chayut Universe Wave Function

Paper A-3 : Entropic Geometry

The Foundations of CUWF, The Pre-Metric Substrate of  
Physical Reality

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**Title:** Chayut Universe Wave Function (CUWF) Paper A-3 Entropic Geometry:  
The Foundations of CUWF, The Pre-Metric Substrate of Physical Reality

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**Date:** 20 August 2025

## Abstract

Paper A-3 establishes the foundational geometric architecture of the Chayut Universe Wave Function (CUWF) by developing entropic geometry as the pre-metric structure from which physical reality emerges. Within this framework, the fundamental substrate of the universe is a continuous wave background, while the observable phenomena of physics arise from the behavior of an entropic field  $E(x)$ , its gradient  $\nabla E$ , its curvature  $\nabla^2 E$ , and its evolution with respect to degrees of freedom.

The paper shows that gravity, mass, inertia, cosmic expansion, time, the quantum–classical transition, measurement, decoherence, and entanglement need not be treated as separate foundational mechanisms. Instead, they are reinterpreted as unified consequences of one entropic–geometric architecture governing wave behavior and collapse-node stability. The analysis proceeds from ontology to mechanism, then from mechanism to mathematical structure, and finally to explicit proofs demonstrating how the CUWF master equations generate the principal physical behaviors traditionally distributed across separate theories.

In this way, Paper A-3 serves as the central architectural paper of the A-series. It consolidates the conceptual foundations of earlier CUWF work, presents the geometric-level master equation of the theory, clarifies its relation to the deeper full wave-dynamic formulation, and establishes a coherent bridge toward the more specialized developments of subsequent papers. The result is a unified geometric map in which physical reality is interpreted as the emergent expression of entropic geometry on a continuous wave substrate.

## Keywords

CUWF; entropic geometry; Fundamental Background Wave; collapse nodes; emergent time; emergent spacetime; gravity as entropic descent; mass as curvature depth; quantum–classical boundary; decoherence; entanglement; DOF evolution

## Table of Contents

1. Introduction
2. The Substrate: Fundamental Background Wave (FBW)
3. Entropic Geometry
4. Interaction Between FBW and Entropic Geometry
5. Wave Dynamics Under Entropic Geometry
6. Collapse Geometry and Node Formation
7. Emergent Spacetime from Entropic Geometry
8. Cosmic Expansion and DOF Geometry
9. Gravity as Entropic Geometry
10. Mass as Curvature Depth
11. Inertia as Geometric Resistance
12. Wave Interference and Multi-Node Stability in Entropic Geometry
13. Stability of the Universe in Entropic Geometry
14. Phase Coherence and the Architecture of Causality
15. The Quantum–Classical Boundary in CUWF
16. The Complete Unified Map of CUWF
17. Decoding the CUWF Master Equation
18. Mathematical Proofs from the CUWF Master Equations
19. Conclusion