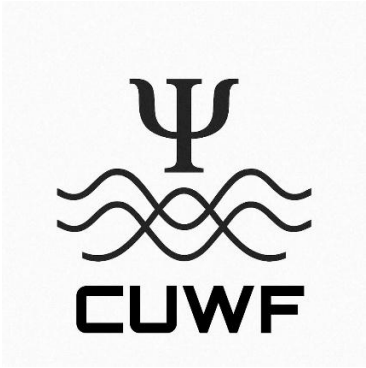

Chayut Universe Wave Function

Paper C-2: Mathematics Formalization

A Complete Entropic-Geometric Framework for Nonlinear Scalar Field Dynamics

Title: Chayut Universe Wave Function (CUWF) Paper C-2: Mathematics Formalization: A Complete Entropic-Geometric Framework for Nonlinear Scalar Field Dynamics

Author: Chayut Techasamran

Affiliation: Independent Researcher, Thailand

Correspondence: cuwfwave@gmail.com

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Abstract

This paper establishes the first rigorous mathematical foundation of the Chayut Universe Wave Function (CUWF) framework. Unlike classical theoretical structures that rely on spacetime manifolds in General Relativity (GR), or on Hilbert-space linearity in Quantum Mechanics and Quantum Field Theory (QM/QFT), CUWF is constructed from a single nonlinear scalar field (E(x,)) defined over a hybrid configuration–degree-of-freedom manifold.

Across Sections M-0 through M-6, this paper introduces the following mathematical structures:

- an entropic metric (g_E) derived from the Hessian of (E);
- entropic-gradient and entropic-Laplacian operators;
- the nonlinear CUWF Master Operator (_E);
- a variational action formulation;

- multi-node entropic Hamiltonians;
- stability-spectrum theory through the eigenstructure of ((E)); and
- reduction limits linking CUWF with GR, QM, and QFT.

The resulting framework provides a complete differential-geometric and operator-theoretic foundation for CUWF. The mathematical entities developed here constitute the base layer for CUWF dynamical theory, entanglement geometry, multi-node evolution, stability analysis, and future extensions in the higher papers of the C-series.

Keywords

entropic geometry; nonlinear operators; scalar-field dynamics; variational methods; eigenvalue stability; multi-node systems; entanglement curvature; CUWF; configuration manifolds; DOF-fiber calculus; nonlinear Laplacian; entropic metric; Hessian geometry; CUWF Master Operator; collapse dynamics; entropic Hamiltonian; quantum-classical boundary

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