



Chayut Universe Wave Function

Paper C-8 CUWF Master Equation and the True Theory
of Everything

Why QM, GR, and QFT Fail to Become Theories of
Everything — and How CUWF Overcomes Their
Structural Limits

Title: Chayut Universe Wave Function (CUWF) PAPER C-8 CUWF Master Equation and the True Theory of Everything : Why QM, GR, and QFT Fail to Become Theories of Everything — and How CUWF Overcomes Their Structural Limits

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Date: 29 January 2026

Abstract

The search for a Theory of Everything (TOE) has long centered on extending existing theories: quantizing gravity, merging gauge groups, embedding quantum mechanics within higher-dimensional formalisms, or reconstructing spacetime from pre-assumed information-theoretic structures. Paper C-8 follows a different route. It argues that Quantum Mechanics (QM), General Relativity (GR), and Quantum Field Theory (QFT) are not failed theories, but powerful projection regimes whose foundational assumptions prevent them from becoming complete generative theories. A genuine TOE must not merely combine existing equations; it must explain why spacetime, collapse, dimensionality, nonlocality, classicality, thermodynamics, and effective physical laws arise at all.

Within the CUWF framework, the full dynamical law is written as $d\Omega/d\tau = -\nabla_{\mathcal{F}}G[\Omega]$, where $\Omega(\tau) = \{X(\tau), g(\tau), N_{\text{eff}}(\tau)\}$ represents the universe-state and $G = \Phi[X] + C[g] + \Xi_{\text{eff}} + R(N_{\text{eff}})$ is the generator functional. The associated condition $\nabla_{\mathcal{F}}G[\Omega] = 0$ is interpreted not as the entire dynamics, but as a fixed-point, stable-projection, or consistency condition under which recognizable physical regimes emerge. This distinction allows CUWF to describe both generative evolution and stable laws within one framework.

Paper C-8 develops the argument that QM, GR, QFT, thermodynamics, and cosmology can be read as coarse-grained projection surfaces of the same generator: QM as a low-curvature, high- N_{eff} , weak-collapse regime; GR as a smooth-curvature, weak-correlation regime; QFT as a mid-scale perturbative excitation regime; and thermodynamics as the macroscopic projection of entropic collapse plus dimensional asymmetry. The paper also evaluates CUWF against formal TOE criteria, identifies broader implications for ontology and information, and states the remaining mathematical, computational, empirical, and conceptual limitations of the program.

The central thesis is that CUWF does not unify known theories by stitching them together. It explains why they appear, why they work, and why they fail outside their projection domains.

Keywords

CUWF Master Equation; Theory of Everything; Generative Functional; Stable Projection Condition; Collapse Geometry; Entropic Curvature; Emergent Spacetime; Dimensional Flow; N_{eff} ; Entanglement Geometry; $\bar{\Xi}_{\text{eff}}$; Quantum Mechanics; General Relativity; Quantum Field Theory; Thermodynamics; Arrow of Time; Foundational Physics; Projection Theory.

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