

## Section 1. Introduction

Quantum theory is widely recognized as one of the most successful scientific frameworks ever constructed. Yet, despite its predictive power, its conceptual foundation remains difficult to interpret in intuitive physical terms—especially when one attempts to answer a seemingly simple question: where, exactly, does quantum information reside in the universe?

In standard quantum mechanics, the state vector (or wavefunction) carries complete information about a system, and measurement outcomes are described through probabilistic postulates such as the Born rule. However, the formalism does not specify a concrete physical architecture for how information is embedded, transported, or reorganized across interacting subsystems. As a result, key phenomena—superposition, entanglement, and collapse—are often described as mathematical rules rather than mechanisms.

The CUWF framework (Chayut Universe Wave Function) proposes that the universe should be understood not merely as a collection of particles and fields, but as a coherent wave-based informational substrate governed by entropic structure. Under this view, information is not an abstract bookkeeping quantity. Instead, it is encoded physically as wave-patterns—structured configurations of amplitude, phase, and correlation—distributed across an entropic network.

This paper introduces the CUWF Quantum Information Architecture (QIA), built upon three central principles: (1) information is wave-pattern encoding, (2) the universe operates as a lossless entropic network in which total information is conserved globally, and (3) wavefunction collapse is best interpreted not as destruction of the quantum state, but as an information re-routing event. Collapse, in this architecture, occurs when measurement constraints or environmental coupling modify the entropic compatibility landscape, forcing the information-flow of the wave-pattern to stabilize into new routing attractors that appear as definite outcomes.

The purpose of this paper is therefore twofold. First, it provides an intuitive and physically grounded language to interpret quantum information within CUWF. Second, it outlines a minimal mathematical

backbone—routing operators, entropic cost functions, and stability weights—intended to bridge qualitative interpretation with formal structure. This approach aims to explain why measurement appears random, why outcomes are discrete and stable, and how nonlocal correlations can arise without enabling superluminal signaling.

Finally, this paper is written with accessibility as a priority. Rather than beginning directly with heavy formalism, the discussion progresses step-by-step from simple conceptual analogies to increasingly structured formulations. In doing so, QIA is positioned as an intermediate layer between the abstract axioms of quantum mechanics and the deeper CUWF ontology of wave-based reality.