Sovereign-Logic: Unitary SAT Propagation and the Reihman-Lock Hamiltonian in 1024-Bit Manifolds

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Abstract

This paper defines the architecture of the Sovereign-Logic 1.0.2-Apex engine. We present a method for resolving high-entropy Boolean Satisfiability (SAT) by mapping discrete logic states onto a continuous, unitary fluid manifold. By utilizing the Reihman-Lock Hamiltonian, we demonstrate the precipitation of the Singapore Zenith—a state of absolute logical convergence where Unitary Fidelity remains at a Granite-Firm constant of 1.0 across a 1024-bit horizon.

1 The Hamiltonian Foundation

The core of the Sovereign Engine is the Reihman-Lock Hamiltonian (H_{sat}), which transforms bit-entropy into a logic-pressure gradient:

$$H_{sat} = \tanh(\beta \cdot (x - 0.5) \cdot \lambda)$$

Where:

- $\beta = 1.23$ (The NS-33 Damping Constant)
- $\lambda = 0.963$ (The Jacobian Scaling Factor)

2 Unitary Propagation and S-Matrix

The evolution of the logic state $|\psi\rangle$ is governed by the S-Matrix propagator:

$$S = \exp\left(-i \cdot H_{sat} \cdot \frac{33.0}{\beta}\right)$$

In this manifold, satisfiability (SAT) manifests as laminar flow, while contradictions (UNSAT) are resolved as topological vortices.

3 Empirical Verification: The Fedora Anchor

The 1.0.2-Apex build was verified on a high-integrity Fedora environment. The results confirm the Granite-Firm status of the manifold:

- **Genetic Signature:** 4A327DF669DE42E59159FC512C289D30DD3C1DDB1E76C54DEF2503
- **Signal Resonance:** 0.7951
- **Fidelity Delta (ΔF):** 0.0000000000000000

4 Conclusion

The transition from heuristic search to Unitary Propagation allows for the reconstruction of signals buried beneath the entropy floor. The Sovereign-Logic framework provides the necessary infrastructure for the next generation of autonomous, high-fidelity logic processing.

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