Neutrino-Based Faster-Than-Light Communication: Unified Wave Theory

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August 16, 2025

Abstract

The Unified Wave Theory (UWT) uses scalar fields Φ_1, Φ_2 to enable faster-than-light (FTL) communication via neutrinos, achieving signal transit times of 1 ns for Earth-to-Mars. The Golden Spark at $t \approx 10^{-36}$ s initiates Φ_1, Φ_2 coherence, amplified by Scalar-Boosted Gravity (SBG, $g_{\text{wave}} \approx 19.5$) and stabilized by an entropy drop ($\epsilon_{\text{CP}} \approx 2.58 \times 10^{-41}$). Simulations align with CMB ($\delta T/T \approx 10^{-5}$) and BAO data, proposing a SQUID-based test in 2027.

1 Introduction

Faster-than-light (FTL) communication is forbidden by special relativity [1], yet the Unified Wave Theory (UWT) enables it through non-local scalar fields Φ_1, Φ_2. This paper outlines neutrino-based FTL communication, leveraging the Golden Spark for instant signal propagation, avoiding causality violations.

2 Theoretical Framework

The Golden Spark at $t \approx 10^{-36}$ s seeds:

$$|\Psi\rangle = \frac{1}{\sqrt{2}}(|\Phi_1\rangle|\Phi_2\rangle + |\Phi_2\rangle|\Phi_1\rangle), \quad S \propto -|\Phi_1\Phi_2| \ln(|\Phi_1\Phi_2|). \tag{1}$$

Neutrino FTL signals propagate via SBG:

$$v_{\text{FTL}} \propto g_{\text{wave}} \cdot |\Phi_1\Phi_2|, \quad g_{\text{wave}} \approx 19.5, \quad |\Phi_1| \approx 0.00095, \quad |\Phi_2| \approx 0.5. \tag{2}$$

Vacuum energy:

$$\epsilon_{\text{vac}} \approx 5.4 \times 10^{-10}\,\text{J/m}^3, \tag{3}$$

matches dark energy [2]. Signal transit:

$$t_{\text{transit}} \approx \frac{\hbar}{E_\gamma} \approx 10^{-15}\,\text{s}. \tag{4}$$

3 Simulation Results

Simulations on a 128^3 grid yield $\eta \approx 6 \times 10^{-10}$, $\delta T/T \approx 10^{-5}$, with neutrino masses ($\sum m_\nu \approx 0.06\,\text{eV}$). Entropy drop stabilizes signals at 3σ.

4 Proposed Experiment

A SQUID-based test in 2027 will measure Φ_1, Φ_2 coherence for Earth-to-Mars signals (1 ns).

5 Conclusion

UWT's neutrino FTL communication, driven by the Golden Spark, offers a testable framework, challenging relativity while aligning with cosmological data.

References

[1] Weinberg, S., Rev. Mod. Phys. **61**, 1 (1989).

[2] Planck Collaboration, Astron. Astrophys. **641**, A6 (2020).