The Second Law of Infodynamics, Informational Entropic Gravity, and SFIT

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1 Introduction

Recent developments in informational entropic gravity (IEG) and the second law of infodynamics proposed by Melvin M. Vopson suggest that information entropy tends to minimize over time, providing a possible foundation for the simulated universe hypothesis [1, 2].

Stevenson-Flux Information Theory (SFIT) extends these concepts into the gravitational domain. Gravity is described as a dynamic information-carrying flux vibrating at the geometric resonance frequency $\nu_{\text{res}} = 1.20134$ mHz, governed by the coupling kernel $K = 1.060$[cite: 21].

The effective potential takes the form[cite: 21]:

$$V_{\text{SFIT}}(z,t) = mgz \left[1 + K \frac{z}{R_E} \operatorname{Re}(\cos(2\pi\nu_{\text{res}} t)) \right]. \tag{1}$$

2 Dampening and Sidereal Dynamics

This flux generates an active dampening field and entropic force that produce the observed Kohlrausch-Williams-Watts (KWW) relaxation tails with $\tau \approx 832.6$ s and $\beta = K = 1.060$ [2].

Stability analysis also reveals a secondary feature near 11.42 Hz[cite: 21]. This mode may represent a higher harmonic or nonlinear mixing product of the primary resonance [3]. The primary 1.20134 mHz signal remains robust and phase-locked[cite: 21].

The sidereal drift of the signal (approximately 3 min 56 s per day) is consistent with a cosmic-scale informational substrate [4]. When data are stacked with sidereal phase correlation, the effective signal-to-noise ratio improves significantly [4].

3 Conclusion

These results suggest that SFIT provides a gravitational realization of infodynamic principles, offering a possible bridge between entropic gravity models and laboratory-scale observations [5].

Future GRANIT experiments will allow tighter constraints on K and further characterization of the 11.42 Hz mode [6].

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