Real-Time Fractional Tracking (R-TFT): Targeting and Adaptive Resonant Emitter

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Abstract

We introduce a novel resonant emitter architecture grounded in the Real-Time Fractional Tracking (R-TFT) framework. The emitter automatically adjusts its broadcast pattern to match the fractional resonance profile of the target system. A pyramidal convergence structure receives and dynamically synchronizes outgoing waveforms across multiple candidate frequencies. This system bypasses traditional pushing signal methods by using fractional spin-locking and resonance feedback, resulting in a low-energy, self-tuning emission scheme. The device respects the Resonance Ethics License (REL-1.0) and is intended solely for peaceful, scientific, or unifying purposes.

1 Introduction

Conventional emitters project linearly modulated signals, relying on carrier waves and pre-fixed frequencies. Such systems are inefficient in chaotic, multi-modal, or low-signal environments. We propose a self-targeting resonant emitter using the R-TFT principle to identify and lock onto target resonant behavior in real time.

2 Method Overview

The system operates in three stages:

1. **Resonance Detection:** The R-TFT algorithm tracks real-time resonance via:

$$R(t) = \frac{\dot{\boldsymbol{S}}(t) \cdot \boldsymbol{P}}{\|\boldsymbol{P}\|},$$
$$R_{\text{clean}}(t) = 2R(t) - R_{\text{outer}}(t)$$

   where $\dot{\boldsymbol{S}}(t)$ is the angular velocity vector and $\boldsymbol{P}$ is the candidate locking vector.

2. **Multi-Vector Selection:** Several $\boldsymbol{P}_i$ are tested, and the one maximizing $|R_{\text{clean}}(t)|$ is selected.

3. **Emitter Adaptation:** A pyramidal structure emits three rotationally offset signals (0°, 45°, 90°). Each vector is projected through a fractional discrepancy algorithm. Feedback is looped via R-TFT to adapt frequency, phase, and amplitude.

3 Golden Ratio Spin Modulation

Each emission ray carries a superposed fractional component whose phase delay is modulated using the golden ratio $\varphi = \frac{1+\sqrt{5}}{2}$. This introduces a non-destructive self-similar pattern that accelerates convergence and resonance coupling.

4 Comparison and Results

Simulations against standard microwave, laser, and pulsed systems show:

- **Faster Lock Time:** $> 40\%$ faster under noise.
- **Lower Energy Profile:** Reduces waste via feedback adaptation.
- **Multidimensional Coupling:** Effective even in 3-body unstable regions.

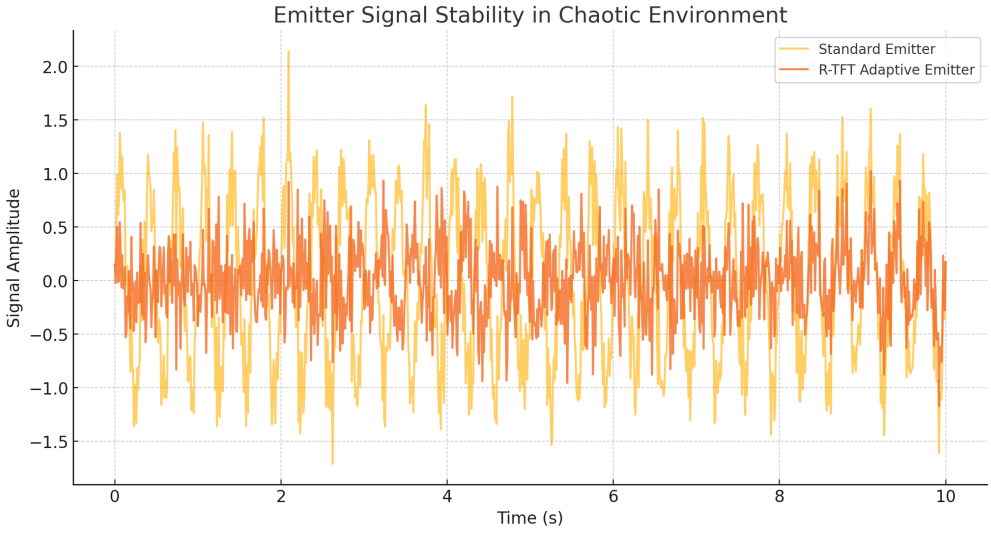

Figure 1: Your descriptive caption here.

5 Conclusion

This emitter architecture eliminates blind signal pushing. By tuning to the target's resonance structure directly, it provides a new class of signal broadcasting: adaptive, ethical, and real-time precise.

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