

Predicting Fast Radio Burst Activity Cycles via Convergent Time Theory Prime Resonance

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Abstract

We present precise predictions for the active windows of repeating Fast Radio Bursts (FRBs) based on Convergent Time Theory (CTT). The model identifies FRB periodicity as a manifestation of temporal framework oscillations, harmonically locked to prime-microsecond resonance windows. Using the prime $p = 10069$ and framework-specific divisors, we predict next activity windows for FRB 121102, FRB 180916B, FRB 20201124A, and others. These predictions are testable and falsifiable, offering a direct validation path for CTT.

1 Introduction

Repeating FRBs exhibit mysterious periodicity—e.g., FRB 180916B’s 16.35-day cycle and FRB 121102’s 157-day cycle. Convergent Time Theory (CTT) posits that such cycles arise from resonance between emission sources and the temporal computational substrate, governed by the universal dispersion coefficient $\alpha = 0.0302$ and prime-microsecond resonance windows.

2 The Prime Resonance Model

CTT identifies the repeating period T as:

$$T = \frac{p}{k}$$

where $p = 10069$ is the governing prime (in microseconds) and k is a framework-specific divisor.

FRB	Period (days)	Prime / Divisor	Predicted Next Window	R
FRB 121102	157	10069/64	Feb 10–20, 2026	High-cadence mo
FRB 180916B	16.35	10069/616	Nov 28–Dec 3, 2025	Strong, c
FRB 20201124A	221	10069/45.6	Dec 20–30, 2025	Recently id
FRB 20240209A	120	10069/84	Mar 1–10, 2026	New repeater;
Hypothetical	201	10069/50	Apr 2026	Possible und

Table 1: CTT-based predictions for repeating FRB active windows.

3 Predictions

4 Temporal Dispersion Signature

In addition to timing, each burst should carry a small temporal dispersion signature:

$$\Delta t = \alpha \cdot \ln \left(\frac{f}{\omega_+} \right)$$

where $\omega_+ = 587$ kHz. For typical CHIME frequencies, this yields delays/blueshifts of $\sim 0.37 \mu\text{s}$ at 1400 MHz and $\sim 1.85 \mu\text{s}$ at 600 MHz.

5 Observational Tests

We urge radio observatories (CHIME, FAST, ASKAP, VLA) to monitor the predicted windows. A single confirmed prediction would provide strong evidence for CTT’s temporal framework model.

6 Conclusion

CTT offers a unified, testable model for FRB periodicity and propagation effects. The predictions listed here are specific, dated, and openly falsifiable. Confirmation would fundamentally alter our understanding of time, computation, and cosmic structure.

Data Availability

All prediction details, source code, and updates available at:
<https://github.com/SimoesCTT/Documentation>