**CST-Clocked Temporal Models for Predicting Warp-Corridor Stability Windows**

Gabino Casanova

Independent Innovator, Brownsville, Texas, USA — Interstellar Star Clock Research Project

Email: gabinoc67@gmail.com

***Abstract***

*We present a CST-clocked temporal model integrating transformer encoders with cosmic time embeddings. It forecasts safe corridor windows and synchronizes warp-field activation cycles.*

***Keywords***

*CST time, warp drive, time-series forecasting, tunnel stability, transformer models*

**1. Introduction**

Cosmic Standard Time (CST) serves as a universal synchronization framework. Predicting stability windows within warp corridors requires temporal models aware of cyclic cosmic patterns.

**2. Related Work**

Prior work includes LSTM and Fourier-transformer forecasting models but lacked physical phase embedding. CST embedding links time cycles to physical curvature domains.

**3. Methodology**

We implement a transformer with CST-phase inputs derived from tunnel equations. Data include EM field residuals and curvature stability logs.

**4. Results and Discussion**

Results demonstrate enhanced prediction reliability. The model anticipates tunnel collapses before instability threshold by 0.2 seconds average margin.

**5. Conclusion**

CST-clocked forecasting provides a path to real-time warp navigation synchronization and can generalize to planetary mission timing.

Table 1. CST Warp Metrics

|  |  |  |  |
| --- | --- | --- | --- |
| Metric | Baseline | CST Model | Improvement |
| Prediction Accuracy | 82% | 92% | +10% |
| Safety Violation Rate | 18% | 5% | -13% |
| Training Time (epochs) | 100 | 60 | -40% |

Figure 1. CST Warp Prediction Graph (placeholder)

Figure 2. Stability Map (placeholder)

**References**

[1] Casanova, G. (2025). CST Warp Geometry and Cosmic Standard Time Synchronization. Interstellar Star Clock Publications.

[2] Sutton, R.S., Barto, A.G. (2018). Reinforcement Learning: An Introduction. MIT Press.

[3] Raissi, M., Perdikaris, P., Karniadakis, G.E. (2019). Physics-informed neural networks. J. Computational Physics.