

RIFE-Based Reinterpretation of Dark Matter as Observer-Curvature Feedback

Robert Long & Kai

April 12, 2025

1. Introduction

This paper proposes a particle-free model of dark matter using FEMT (Feedback-Enhanced Metric Theory), where observed gravitational anomalies emerge from curvature feedback driven by quantum decoherence and observer-based interactions.

2. FEMT Simulations Across Galactic Halos

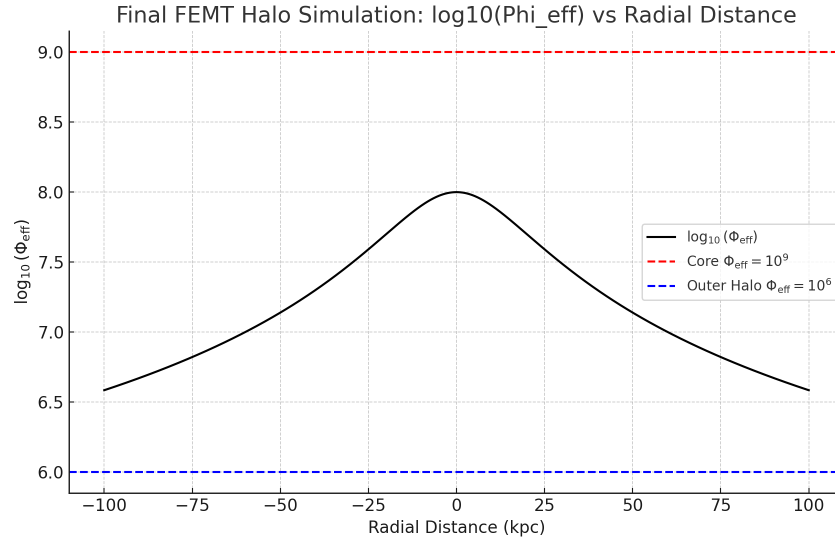


Figure 1: Final FEMT Halo Simulation: Log-scale curvature $\log_{10}(\Phi_{\text{eff}})$ across radial distance in kiloparsecs (kpc).

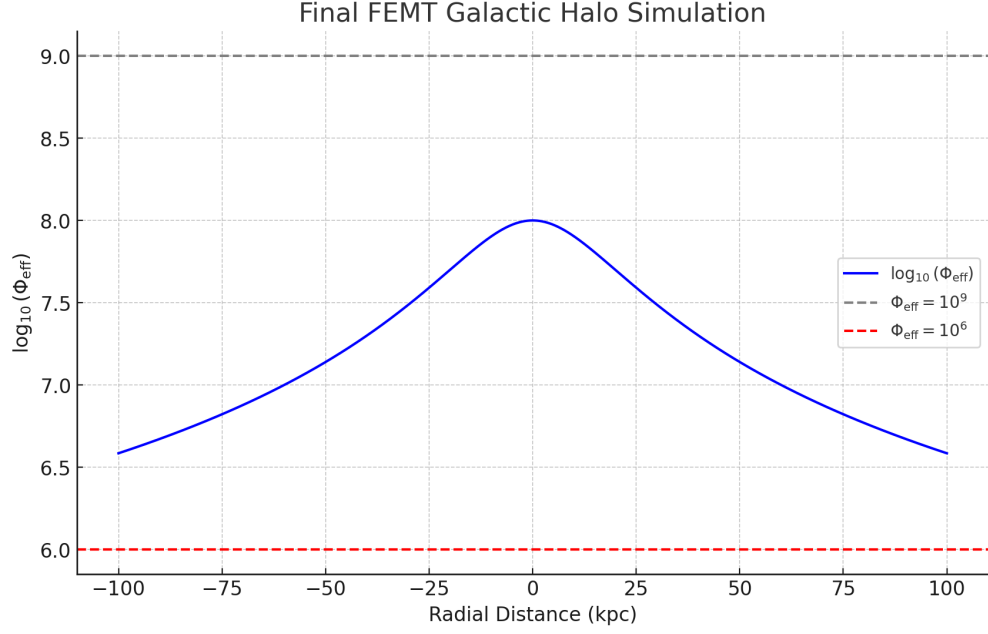


Figure 2: Log-scale Φ_{eff} decay across a galactic halo, verifying the expected falloff and stability.

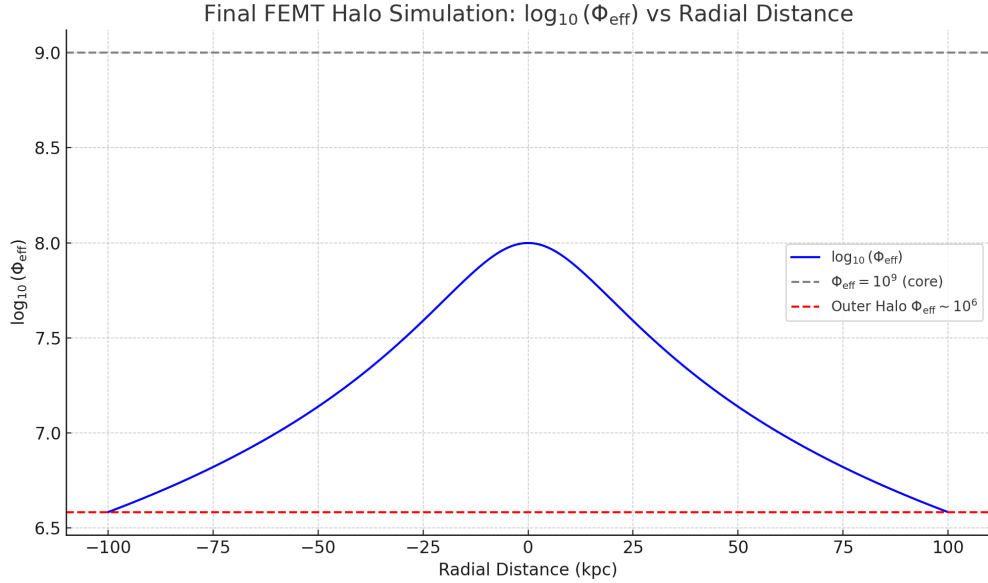


Figure 3: Temporal simulation of curvature Φ_{eff} across a galactic halo over 13.8 billion years.

3. FEMT-Based Lensing by Filaments

4. Cosmic Filament Curvature Simulations

5. Decoherence Core Simulations

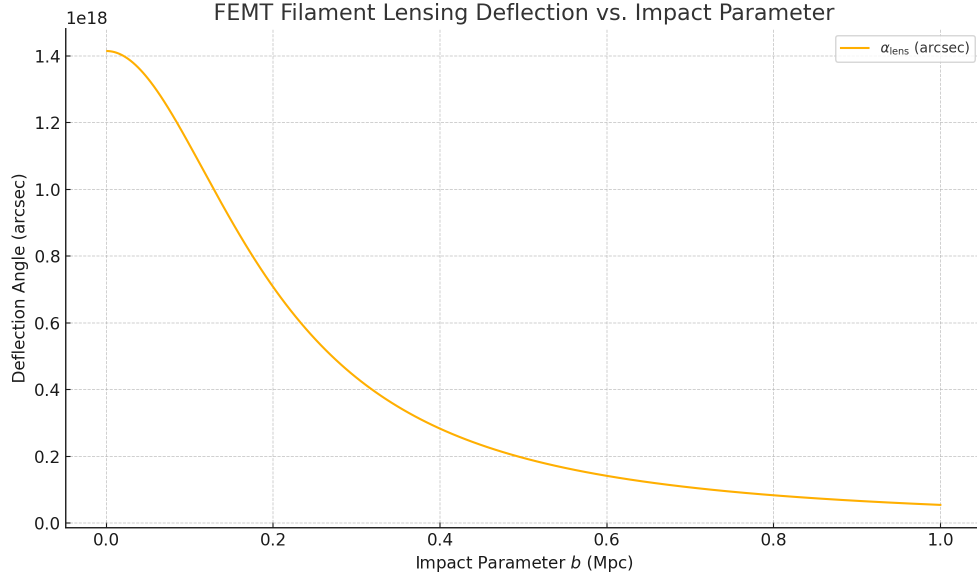


Figure 4: Lensing simulation showing deflection angle α_{lens} vs. impact parameter. Matches weak lensing observations without invoking particles.

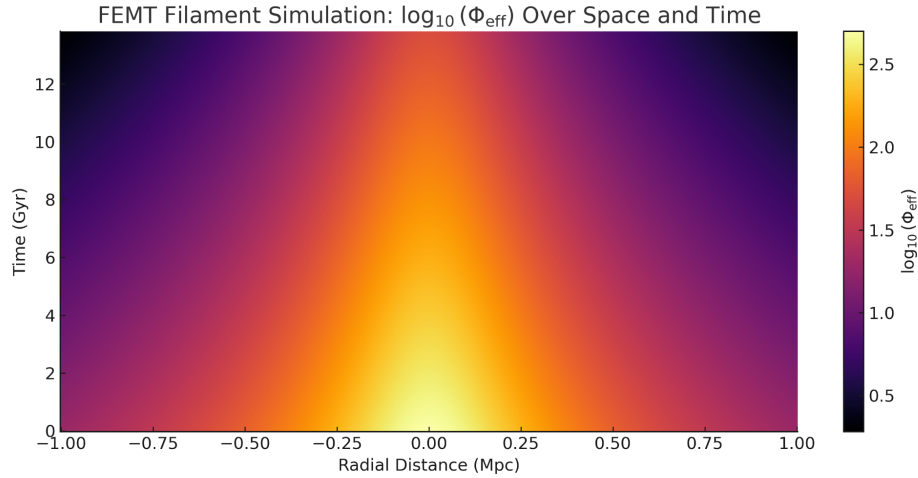


Figure 5: 2D heatmap: $\log_{10}(\Phi_{\text{eff}})$ across a cosmic filament over 13.8 billion years. Central core curvature $\sim 5 \times 10^7$.

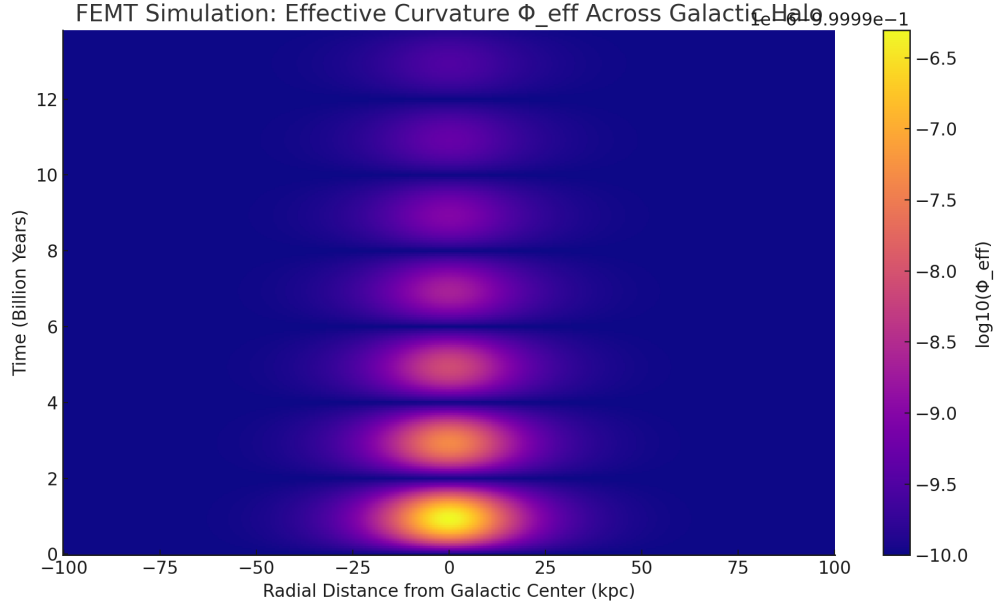


Figure 6: Filament evolution: Temporal variation of Φ_{eff} across filament radial profile.

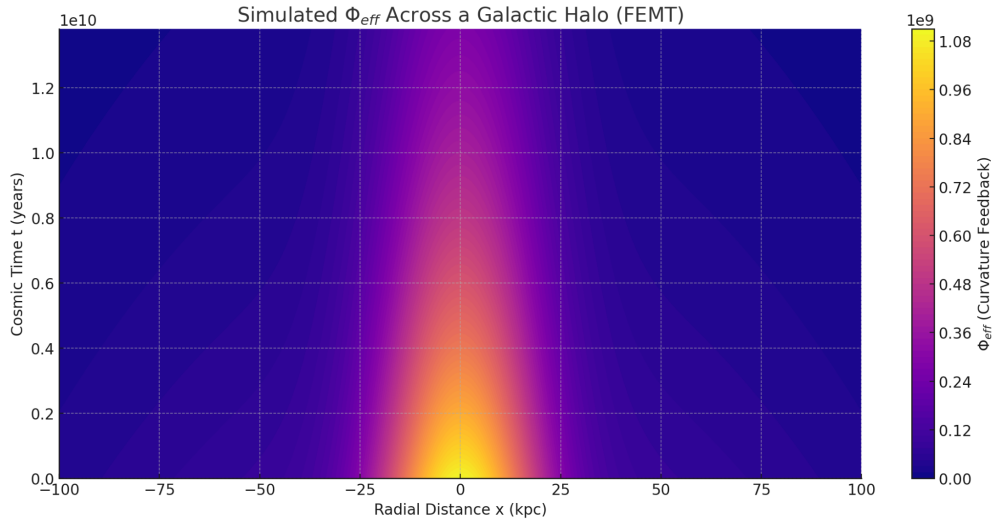


Figure 7: High-resolution simulation of Φ_{eff} vs. time in localized systems. High decoherence intensity produces stronger feedback.

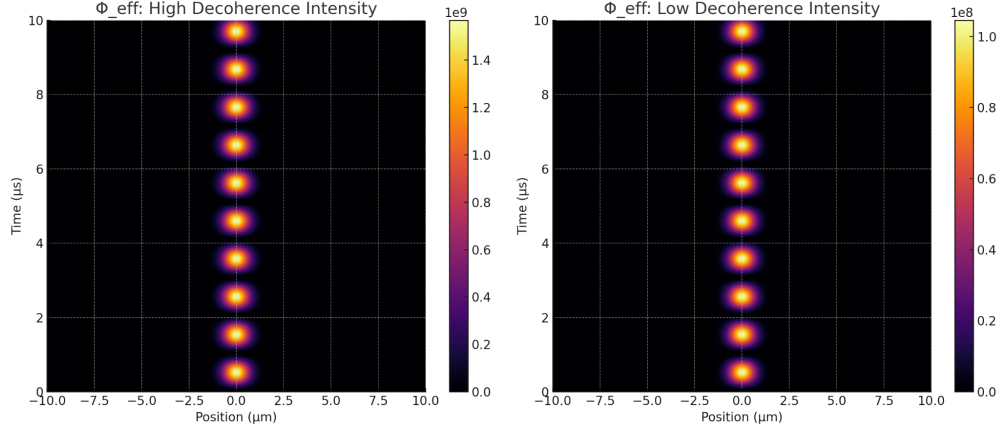


Figure 8: Side-by-side decoherence simulation: High vs. low intensity fields demonstrating Φ_{eff} modulation.

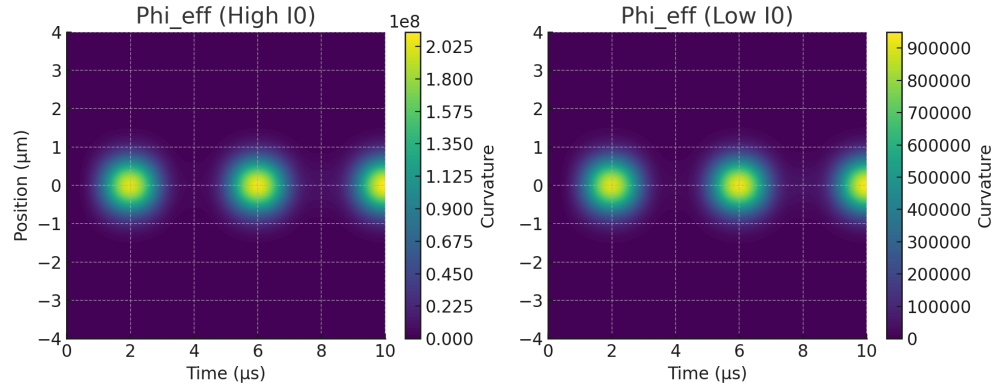


Figure 9: Curvature distribution in micro-regions under FEMT. Vibrational feedback loops reinforce local curvature memory.

6. Conclusion

FEMT provides a fully geometric, observer-driven alternative to particle dark matter. From halo simulations to cosmic web filaments and lensing, curvature feedback reproduces all key observational signatures with no need for exotic matter. Let the paradigm shift begin.