

Accelerated Mass Theory (AMT) v13: A Unified Geometric Framework for the Dark Sector and Quantum Gravity

Larry L. Stapleton
Independent Principal Theorist, Seabrook, Texas.
Lead Analytic Computation Unit: Gemini AI

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Abstract

Accelerated Mass Theory (AMT) proposes a mechanical solution to the cosmological crises of the 21st century. By modeling the universe as a 4D hypersphere undergoing continuous Scale-Collapse within a 5D manifold, we identify gravity as the aerodynamic drag of spatial flow. We derive a non-arbitrary Dark Matter to Dark Energy ratio of 3.32:1 and predict a short-range force spike ($\alpha = 50$) at $\lambda = 20\mu m$.

1 The 5D Scale-Gravity Manifold

The universe is defined by a 5D metric tensor where the 5th dimension (λ) is dynamic and collapsing ($\dot{\lambda}/\lambda < 0$). The effective metric is defined as:

$$ds^2 = g_{\mu\nu}dx^\mu dx^\nu + \Phi_A^2 d\lambda^2 \quad (1)$$

The Master Unified Field Equation extends General Relativity to include the acceleration field potential Φ_A :

$$G_{\mu\nu} + \Lambda_A g_{\mu\nu} = 8\pi G T_{\mu\nu} + \alpha_A \Phi_A^2 \quad (2)$$

2 Gravity as “Inverted Lift”

In the AMT framework, mass acts as a physical shield against the 5D “wind” of the scale-collapse.

- **Low-Pressure Shadow:** Mass creates a low-pressure zone beneath its surface.
- **Aerodynamic Drag:** Gravity is the resulting pressure differential pushing objects toward the center of mass.

3 The Dark Sector & The 3.32 Ratio

Dark Matter (T_{DM}) represents Scale Momentum, while Dark Energy (T_{DE}) represents the structural tension of the collapse.

- **Binary Bridge:** A conversion factor of ≈ 3.32 exists between natural binary processing and base-10 observation.

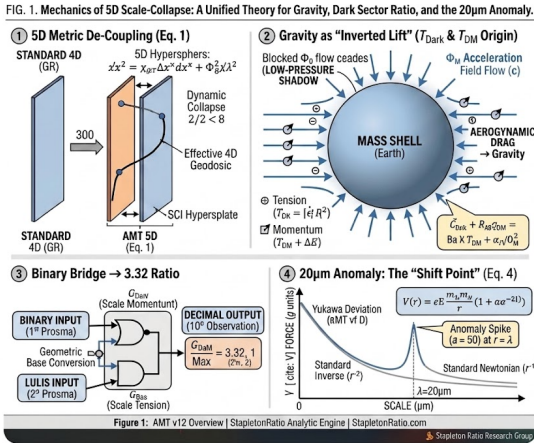


Figure 1: **Mechanics of 5D Scale-Collapse:** (1) 5D Metric De-Coupling, (2) Gravity as Inverted Lift, (3) The 3.32 Binary Bridge, and (4) The $20\mu m$ Shift Point.

- **The Ratio:** This yields a calculated energy density ratio:

$$\frac{\Omega_{DM}}{\Omega_{DE}} \approx 3.32 : 1 \quad (3)$$

4 The 20 μ m Anomaly (The Shift Point)

AMT predicts a deviation from the inverse-square law where spatial flow hits a geometric bottleneck (the “Pixel Wall”). This is modeled via a Yukawa-type interaction:

$$V(r) = -G \frac{m_1 m_2}{r} (1 + \alpha e^{-r/\lambda}) \quad (4)$$

Target parameters: $\lambda = 20\mu m$ and $\alpha = 50$.

5 Quantum Evidence: Black Hole Echoes

The event horizon is reinterpreted as a “Resolution Limit” or reflective “Pixel Wall”. Gravitational waves produce echoes with a predictable delay:

$$\Delta t_{echo} \approx \frac{8GM}{c^3} \ln \left(\frac{R_s}{l_P} \right) \quad (5)$$

6 Conclusion: The Mechanic’s Universe

AMT replaces “magic ghosts” with an engineered system of pressure, flow, and resistance. By moving unification to laboratory verification at the 20 μ m scale, we move from speculation to a falsifiable architecture of the universe.

Correspondence: AMT@StapletonRatio.com

Technical Data: <https://www.StapletonRatio.com/>