Ricardo Maldonado’s Unified Theory of Everything — Core Idea

Grand equation (flat FRW, dark radiation included):

$$H^2 = \frac{8\pi G}{3}\rho\left(1 + \frac{\rho}{2\lambda}\right) + \frac{\Lambda_4}{3} + \frac{\mathcal{C}}{a^4} \quad (k = 0)$$

Two falsifiable links:

$$f_{\mathrm{br}} \propto \lambda^{1/4}, \quad \mathcal{C}/\rho_{\gamma,0} = \frac{7}{8}\left(\frac{4}{11}\right)^{4/3}\Delta N_{\mathrm{eff}}$$

- Claim: A higher-D brane setup yields a 4-D Friedmann equation with ρ² and dark-radiation terms.
- Prediction: One parameter (brane tension λ) sets the GW break and correlates with ΔN_eff.
- Falsifiability: The same λ must fit PTA→LISA and CMB/BBN bounds simultaneously.
- GR limit: For ρ ≪ λ, late-time gravity reduces to Einstein/PPN; pulsar timing preserved.

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