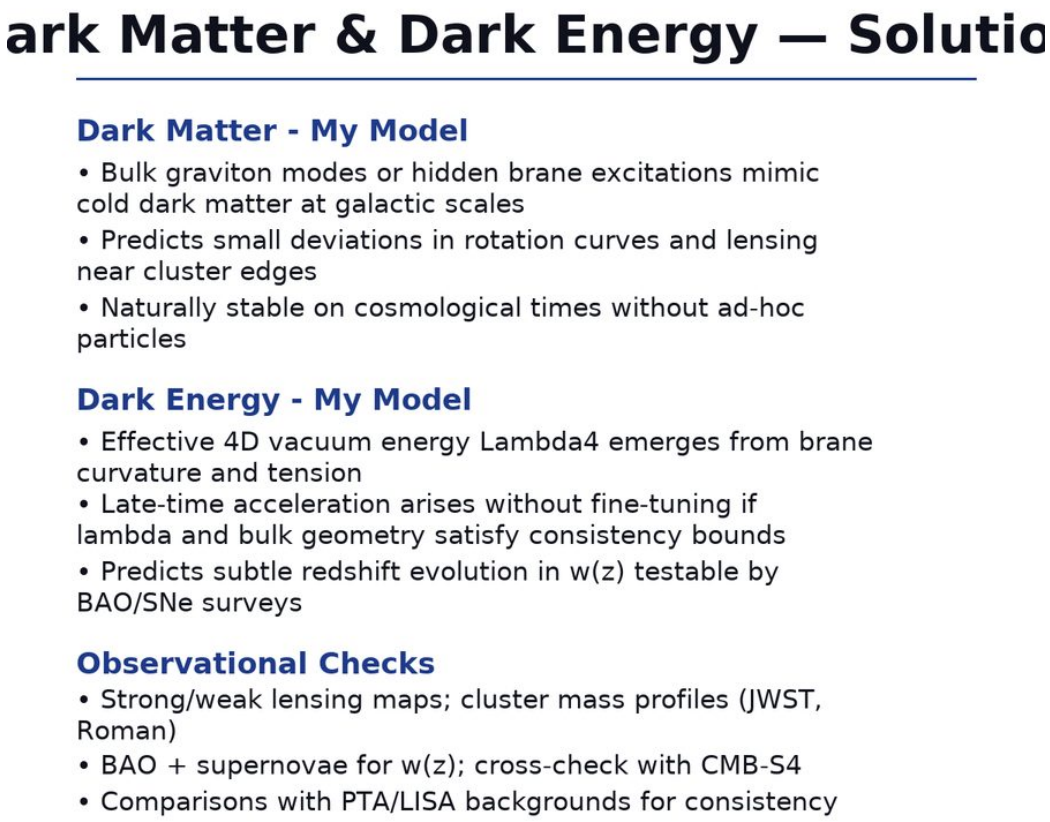
A Unified Theory of Everything — Condensed Research (MINI, Part 2)

Ricardo Maldonado — sales@rank.vegas — Aug 09, 2025

4. Dark Sector and Black Holes



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Dark Matter - My Model

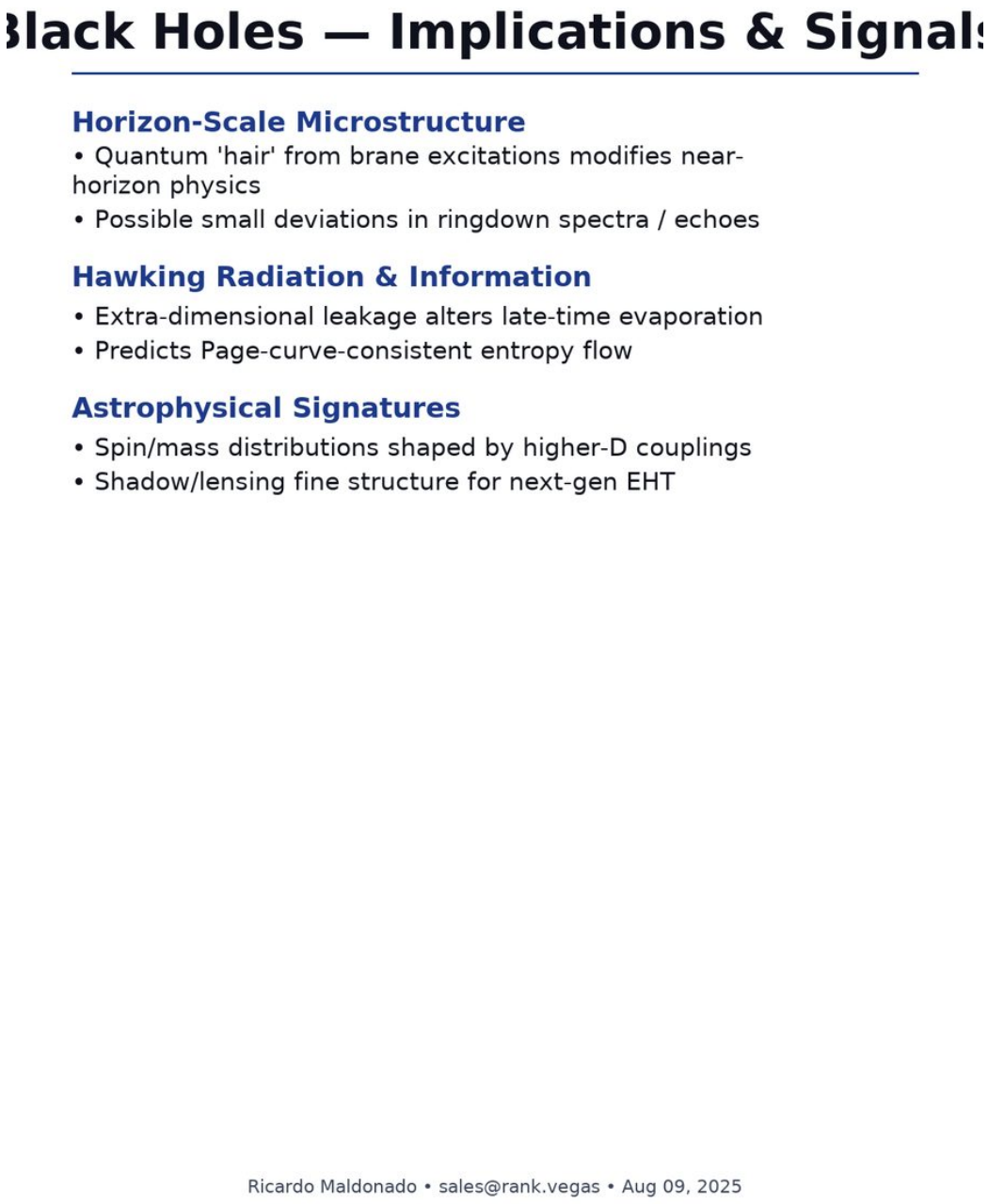
• Bulk graviton modes or hidden brane excitations mimic cold dark matter at galactic scales
• Predicts small deviations in rotation curves and lensing near cluster edges
• Naturally stable on cosmological times without ad-hoc particles

Dark Energy - My Model

• Effective 4D vacuum energy Lambda4 emerges from brane curvature and tension
• Late-time acceleration arises without fine-tuning if lambda and bulk geometry satisfy consistency bounds
• Predicts subtle redshift evolution in w(z) testable by BAO/SNe surveys

Observational Checks

• Strong/weak lensing maps; cluster mass profiles (JWST, Roman)
• BAO + supernovae for w(z); cross-check with CMB-S4
• Comparisons with PTA/LISA backgrounds for consistency



5. Predictions and Falsifiability

Testable Predictions — At a Glance

Gravitational Waves

- Broken power-law Omega_GW(f) from brane-blast dynamics
- Low-frequency (PTAs) + mid-band (LISA) complementarity
- Amplitude-break relation provides unique fingerprint

CMB Imprints

- Modified early expansion via rho^2-term leaves phase shifts
- Mild non-Gaussianity; possible low-l anomalies
- Delta N_eff ~ 0.2-0.4 consistent with dark radiation

Particle/Collider

- Warped-dimension effects near unification thresholds
- No Planck-suppression anomalies; running couplings shift
- Look for missing energy channels consistent with bulk leakage

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Cross-domain decision points: if GW/CMB/collider data fail the predicted correlations within reasonable parameters, the scenario is disfavored; if found, it supports the framework.

6. Outlook

Next steps: detailed parameter forecasts (PTA/LISA, CMB-S4), microphysical modeling of the brane event, and embedding in realistic compactifications.

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Title: Unified Theory of Everything - Higher-Dimensional Brane Supernova

Summary: Unifies gravity, electromagnetism, strong & weak forces via a brane-world geometry; replaces the initial singularity with a higher-D energy event; provides testable predictions.