Tension Resolution Predictions from the OuruO Gravitation Model

# Hubble Tension

The model introduces a time-varying vacuum energy Λ(t) sourced by accumulated horizon entropy. This allows late-time acceleration without modifying early universe physics, naturally increasing H₀ locally.

# S₈ Tension

Self-interacting dark matter arises from fragmented soliton-like remnants. This interaction suppresses small-scale clustering, resolving discrepancies in observed matter power spectra.

# Coincidence Problem

Vacuum energy is not fundamental but emerges from black hole horizon entropy. Λ(t) becomes dynamically significant only after peak structure formation, explaining the coincidence without fine-tuning.

# Small-Scale Problems (Cusp-Core, Missing Satellites, Too-Big-To-Fail)

DM fragments exhibit self-interaction and pressure support from their internal geometry. This softens cusps, limits substructure formation, and suppresses overly dense dwarfs.

# Matter-Antimatter Asymmetry

Asymmetry may result from early horizon bias during entropy conversion, with parity-violating effects tied to the geometry of the emergent tension field.

# Flatness and Horizon Problems

The model supports emergent large-scale geometry via tension equilibration, potentially removing the need for inflation by enabling causal smoothing through horizon processing.

# Long-Range Encoding and Holography

Local vacuum tension is informed by the integrated entropy of all black hole horizons. This provides a mechanism for emergent, localized holographic encoding.

# Late-Time Cosmic Acceleration

Acceleration results from cumulative vacuum tension generated by black hole entropy production, not a static cosmological constant.

# Dark Energy Equation of State (w)

Λ(t) evolves with horizon growth. This predicts a slightly dynamic equation of state w(z) ≠ -1, testable with next-gen cosmological surveys.

# Dark Matter–Dark Energy Coupling

DM and DE arise from the same microphysical mechanism—horizon dynamics—rather than a mediating scalar field. This naturally links their ratios without invoking fifth forces.