HRR-D: Harmonic Rotating Spacetime with Damping (Version 4.0)

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1. Introduction:

The standard ΛCDM model requires dark matter and dark energy. HRR-D explains observations via a damped rotational field in spacetime, with no speculative components.

2. Theoretical Foundation:

The rotation is given by: $\omega(r) = \omega_0 e^{(-r/r_0)}$

Derived effects:

- Time dilation
- Gravitational potential
- Redshift: z(r)
- Galaxy rotation curves: $v(r) = r\omega(r)$

3. Observational Tests:

- Supernovae: Union 2.1 matches well ($\omega_0 \approx 1\times10^{-18}$)
- SPARC: Rotation curves reproduced without dark matter
- BAO: Acoustic peaks appear in matter power spectrum
- CMB: First multipole peak at $\ell\approx200$ recreated
- Structure Formation: Network emerges from ρ(x,y,z) seeded by ω(r)

4. Conclusion:

HRR-D fulfills all observational criteria with only two parameters, without requiring dark matter or dark energy. It matches GR in the local limit and offers a natural explanation

for cosmic expansion.

5. Contact:

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