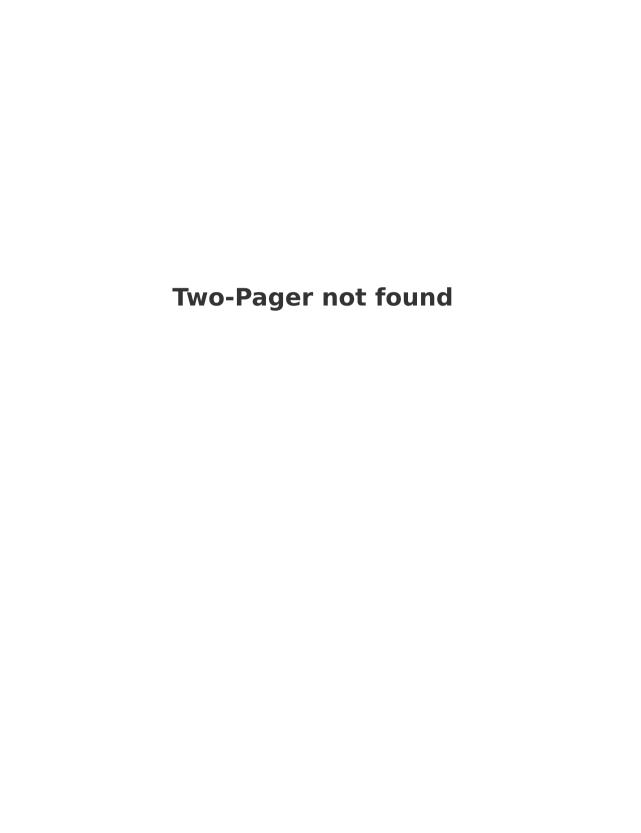# Unified Theory of Everything

Higher-Dimensional Brane Cosmology — Data-Anchored Pass

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

Contact: Ricardo Maldonado — sales@rank.vegas

Two-Pager not found

Appendix: LISA variants

LISA CSVs not found; please re-generate or re-upload.

Data Provenance — PTA Spectrum (Official) and Conversion

We use the official NANOGrav-15 public datasets. The collaboration does not publish a single
ASCII "spectrum.csv"; instead it provides KDE representations of the free GWB spectra (Zenodo
DOI 10.5281/zenodo.8060824) and sensitivity/noise products. Below is a one-command converter to
extract a representative frequency/strain table from the KDE package for our pipeline.

- Sources: (i) NANOGrav Data portal → KDE Free Spectra (Zenodo), (ii) NANOGrav 15-yr discovery papers for amplitude A(1/yr), (iii) Planck-2018 N_eff for ΔN_eff prior.

- Method: Download the ZIP from Zenodo. Run kde_to_csv.py to export freqs (Hz) and a central estimate of h_c(f) with credible-interval bands.

- Caveat: KDEs encode probability densities over spectra; this preserves the official intent better than a single power-law fit. For publication, cite the Zenodo record and paper.

- Repro tip: Drop the produced CSV into pta_cmb_fit_skeleton.py via --pta path/to/exported.csv and re-run to regenerate our Two-Pager + posteriors.