

Cover Letter — PRL

Physical Review Letters Editorial Office

Subject: Presubmission — testable brane-world unification

Dear Editors,

I submit “A testable brane-world unification with early-time ρ^2 and dark radiation” (Ricardo Maldonado). From a higher-D action we derive the SMS equations and a modified Friedmann relation featuring a ρ^2 term and dark-radiation. A single parameter λ sets a GW spectral break $f_{br} \propto \lambda^{1/4}$ and correlates with ΔN_{eff} . We present posteriors using the official NANOGrav 15-year KDE spectrum with a Planck-2018 prior, plus a PTA→LISA context figure. The framework reduces to GR at late times and is falsifiable via a joint PTA + CMB/BBN fit. We request consideration as a Letter/Article.

Sincerely,

Ricardo Maldonado

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