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Constraints on induced gravity dark energy models

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We study the predictions for structure formation in an induced gravity dark energy model
with a quartic potential. By developing a dedicated Einstein-Boltzmann code, we study
self-consistently the dynamics of homogeneous cosmology and of linear perturbations
without using any parametrization,
accurately recovering the quasi-static analytic approximation in the matter dominated era.
We use CMB anisotropies data and a compilation of BAO data to constrain the coupling
γ to the Ricci curvature and the other cosmological parameters.
By connecting the gravitational constant in the Einstein equation to the one measured in a Cavendish-like experiment, we find $\gamma < 0.0012$ at 95 % confidence level with Planck 2013 and BAO data, and present the updated Planck 2015 constraint. Because of a degeneracy between γ and the Hubble constant H_0, we show how larger values for γ are allowed, but not preferred at a significant statistical level,
when local measurements of H_0 are combined in the analysis with Planck data.
We also extend the analysis and constraints to a simple monomial potential with a positive
exponent.

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