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# Generalized K-essence inflation in Jordan and Einstein frames

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We here explore a specific class of scalar field, dubbed quasi-quintessence which exhibits characteristics akin to ordinary matter. Specifically, we investigate under which conditions this fluid can mitigate the classical cosmological constant problem. We remark that, assuming a phase transition, it is possible to predict inflationary dynamics within the metastable phase triggered by the symmetry breaking mechanism. During this phase, we study inflationary models incorporating this cancellation mechanism for vacuum energy within the context of quasi-quintessence. There, we introduce four novel potentials, categorized into two main groups, i.e., the Starobinsky-like and symmetry breaking paradigms. Afterwards, we consider two distinct cases, the first without coupling with the curvature, while the second exhibiting a Yukawa-like interacting term. Hence, we compute the inflationary dynamics within both the Jordan and Einstein frames and discuss the objective to unify old with chaotic inflation into a single scheme. We therefore find the tensor-to-scalar ratio and the spectral terms and conclude that the most suited approach involves the Starobinsky-like class of solution. Indeed, our findings show that small field inflationary scenarios appear disfavored and propose de facto a novel technique to reobtain the Starobinsky potential without passing through generalizations of Einstein's gravity. Last but not least, we conjecture that vacuum energy may be converted into particles by virtue of the geometric interacting term and speculate about the physics associated with the Jordan and Einstein frames.

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