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Quintessential Inflation in Palatini Modified Gravity

Monday 25 July 2022 14:18 (18 minutes)

In this talk, I will give a brief introduction to quintessential inflation, a theoretical framework that aims to explain both inflation and dark energy observations to alleviate the incredible fine-tuning of ΛCDM. Furthermore, I will show how adding both an R^2 Starobinsky term and a non-minimal coupling to the inflaton/quintessence field term in the action in the Palatini formalism can rescue the exponential potential, which is well known not to be valid for either inflation or dark energy in the canonical setup. Since the full equations of motion in the Jordan frame are numerically solved, and a parameter scan of the theory is performed, we are able to obtain specific testable predictions, such as the barotropic parameter of dark energy and its running, which will be testable in the near future, as well as constraints on the theory, e.g., on the value of the running of the non-minimal coupling term.

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