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## Slow-roll inflation in Palatini $F(R)$ gravity

*Thursday, 7 July 2022 10:30 (15 minutes)*

We study single field slow-roll inflation in the presence of  $F(R)$  gravity in the Palatini formulation. In contrast to metric  $F(R)$ , when rewritten in terms of an auxiliary field and moved to the Einstein frame, Palatini  $F(R)$  does not develop a new dynamical degree of freedom. However, it is not possible to solve analytically the constraint equation of the auxiliary field for a general  $F(R)$ . We propose a method that allows us to circumvent this issue and compute the inflationary observables. We apply this method to test scenarios of the form  $F(R) = R + \alpha R^n$  and find that, as in the previously known  $n = 2$  case, a large  $\alpha$  suppresses the tensor-to-scalar ratio  $r$ . We also find that models with  $F(R)$  increasing faster than  $R^2$  for large  $R$  suffer from numerous problems, with possible implications on the theoretically allowed UV behaviour of such Palatini models. The talk is based on arXiv:2112.12149.

### In-person participation

No

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