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Multifield models of inflation with spiral-like potential

The mechanism of inflation is likely to be described in the context of theories beyond the standard model since it took place in the very early Universe, where the energy scale can be as large as $10^{15} GeV$. Thus, it is theoretically justified to consider more than one scalar field during inflation. Besides being well justified from a theoretical point of view, multifield models of inflation present a phenomenology rich of potentially observational consequences.

Computing the observables and the slow roll parameters for multifield models, among other features, reveal that there is a discrepancy between ϵ_V and ϵ_H translates to a non-null speed of sound c_s and a possibly high value for the turning rate Ω .

In our work we discuss various facets of multifield models beyond non standard cosmology in both cases of slow-roll inflation and hyperinflation. We focus our attention on those models which present a spiral-like potential and on the computation of Ω , investigating its physical meaning and the potential characteristics that influence its value.

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