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Inflation and tachyonic preheating with twin waterfalls

In view of the improving measurements of the tensor-to-scalar ratio, hybrid inflation remains a suitable mechanism to achieve low-scale inflation. However, as originally proposed, hybrid inflation with a single waterfall field gives rise to a hierarchy problem, also known as the η problem. In this work, we consider an extension to the original model in which twin waterfall fields, related by a Z_2 symmetry, ensure the flatness of the inflationary potential. We study the initial conditions required for successful inflation and the post-inflationary epochs of perturbative reheating and tachyonic preheating. We also comment on how our model can arise from a microscopical dark QCD model.

Secondary category for the parallel session (optional)

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