

Reheating after Axion Inflation and its implications

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In modern cosmology, it is generally assumed that after inflation, the energy of the inflaton field is transferred to radiation through a process known as reheating.

Axion-like particles (ALPs) have recently attracted attention as potential inflaton candidates, since their shift symmetry naturally protects the flatness of the inflaton potential.

In this work, we study reheating in a model where the ALP couples to a non-Abelian gauge field via a Chern–Simons interaction. In this scenario, energy transfer proceeds resonantly, as familiar from preheating analyses, and is expected to be highly efficient. However, a significant challenge remains: even a small fraction of the inflaton may eventually come to dominate the energy density again.

In this talk, I will present how reheating is completed in this context and discuss its implications for observation.”

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