## Phenomenology 2018 Symposium



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## **Cosmology of Weakly Coupled Flavons**

Tuesday 8 May 2018 17:15 (15 minutes)

We examine the cosmological constraints on models in which the Standard Model Higgs Yukawa couplings depend on a new scalar field, the so-called flavon. Production of flavons and their subsequent decay in the early universe pose two threats to standard cosmology: they may spoil the successful predictions from primordial nucleosynthesis (BBN), or they may dilute the primordial baryon asymmetry to an unacceptable level. Though our explicit calculations are performed in the specific framework of Froggatt–Nielsen models, the constraints we derive apply to a much broader range of frameworks in which the Yukawa interactions are determined by the expectation value of a scalar field.

## Summary

Decaying flavons in the early universe can break apart nuclei and dilute the baryon density.

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