

The 2023 Shanghai Symposium on Particle Physics and Cosmology: Phase Transitions, Gravitational Waves, and Colliders (SPCS 2023)

Contribution ID: 2

Type: **not specified**

Cosmic Stasis from Primordial-Black-Hole Evaporation and Its Phenomenological Implications

Saturday, 23 September 2023 19:20 (20 minutes)

Cosmic stasis is a phenomenon in which the abundances of multiple cosmological energy components — components such as matter, radiation, or vacuum energy — remain effectively constant despite the expansion of the universe. One mechanism which can give rise to an extended period of cosmic stasis is the evaporation of a population of primordial black holes (PBHs). In this talk, I review how PBH evaporation can lead to a stasis epoch and examine the observational consequences of such a modification to the cosmic expansion history. These include implications for inflationary observables, for the stochastic gravitational-wave background, and for the production of dark matter and dark radiation.

Primary author: HUANG, Fei (Weizmann Institute of Science)

Co-authors: Prof. THOMAS, Brooks (Lafayette College); Dr KIM, Doojin (Texas A&M University); Prof. DIENES, Keith (University of Arizona); Dr HEURTIER, Lucien (Durham University); Prof. TAIT, Tim (University of California, Irvine)

Presenter: HUANG, Fei (Weizmann Institute of Science)

Session Classification: Parallel 2