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

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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.

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