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Warm inflation and its observational constraints

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The theory of primordial inflation has been highly successful in resolving theoretical difficulties of standard FRW cosmology. Moreover, many of the general predictions of inflation have been confirmed by observation. However, higher precision measurements of the cosmic microwave background (CMB) now disfavor many inflation-driving potentials due to a suppression of the tensor-to-scalar ratio. Alternatively, one scenario of interest is “warm” inflation, whereby the primordial field converts its energy into radiation during the expansion. I will show how warm inflation allows some inflation potentials that are otherwise excluded by the CMB data. I will discuss how warm inflation allows the symmetry breaking scale to remain below the Planck energy as well as how it impacts the production of primordial black holes.

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