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Warming Up Cold Inflation

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The axion is a well-motivated candidate for the inflaton, as the radiative corrections that spoil many single-field models are avoided by virtue of its shift symmetry. However, axions generically couple to gauge sectors. As the axion rolls through its potential, this coupling can result in the production of a co-evolving thermal bath, a situation known as “warm inflation.” Inflationary dynamics in this warm regime can be dramatically altered and result in significantly different observable predictions. In this talk, I will show that for large regions of parameter space, axion models once assumed to be safely “cold” are in fact warm, and must be reevaluated in this context.

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