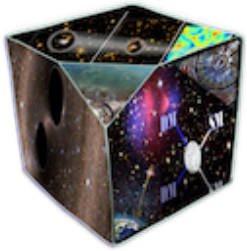

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Boosting the Annihilation Rate with Ultracompact Minihalos

Cosmological inflation generates primordial density perturbations which are scale-free on observable scales but that may be considerably larger on smaller scales. The boosted power spectrum at small scales leads to increased formation of dense, small-scale structure at early times, enhancing the present-day annihilation rate of annihilating dark matter. In this work, we show how to compute the impact of a power spectrum predicted by an inflationary model on WIMP indirect detection, leading to constraints on the WIMP-inflation parameter space within the context of axion inflation and establishing a procedure for similar future inquiries.

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