

Freeze-in self-interacting dark matter in warped extra dimension

A classically scale-invariant scalar singlet can be a MeV-scale dark matter, with a feeble Higgs portal coupling at $O(10^{-10})$. Besides, an $O(0.1)$ self-interaction coupling could further serve to alleviate the small-scale problems in the Universe. We show that, such a dark matter candidate can naturally arise in the warped extra dimension, with the huge span of parameter space predicted well within $O(1)$ fundamental parameters.

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