

Dark Matter from Exponential Growth

Wednesday, 22 September 2021 15:15 (15 minutes)

We propose a novel mechanism for the production of dark matter (DM) from a thermal bath, based on the idea that DM particles χ can transform heat bath particles ψ : $\chi\psi \rightarrow \chi\chi$. For a small initial abundance of χ this leads to an exponential growth of the DM number density, in close analogy to other familiar exponential growth processes in nature. We demonstrate that this mechanism complements freeze-in and freeze-out production in a generic way, opening new parameter space to explain the observed DM abundance, and we discuss observational prospects for such scenarios.

Do you wish to attend the workshop on-site?

yes

Summary

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