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Dark Matter from Exponential Growth

lundi 30 mai 2022 17:30 (20 minutes)

We propose a novel mechanism for the production of dark matter (DM) from a thermal bath, based on the idea that DM particles can transform heat bath particles : ! . For a small initial abundance of 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. Finally, we discuss possible model realizations in the contexts of Higgs portal couplings as well as sterile neutrinos, and investigate observational prospects for such scenarios.

Orateur: DEPTA, Paul Frederik (Max-Planck-Institut für Kernphysik)

Classification de Session: Parallel Session 1