

New Pathways to the Relic Abundance of Vector-Portal Dark Matter

Wednesday, 9 December 2020 16:00 (1 hour)

In the conventional weakly-interacting massive particle (WIMP) paradigm the late-time density of dark matter (DM) is set by the rate of two-body annihilations, but there has been considerable recent interest in exploring alternative DM scenarios where other interactions control the final abundance. I will show that by fully exploring the parameter space of a simple, weakly-coupled dark sector, we can find a rich set of novel pathways which lead to the observed relic density of DM. In particular, we can identify and characterize a general class of mechanisms in which the DM relic abundance is determined by processes controlling the thermal coupling of the DM and Standard Model (dubbed the KINetically DEcoupling Relic – KINDER), generalizing previously-studied special cases of this behavior.

Join Zoom Meeting

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Meeting ID: 974 9947 4494

Passcode: HEP_joint

Presenter: FITZPATRICK, Patrick (Massachusetts Institute of Technology)