

Composite pNGB Dark Matter

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The dark matter (DM) could emerge along with the Higgs as a composite pseudo-Nambu-Goldstone boson with decay constant $f \sim \text{TeV}$. This type of WIMP is especially interesting because its leading interaction with the Standard Model, the derivative Higgs portal, has the correct annihilation strength for thermal freeze-out if the DM has weak-scale mass, but is negligible in direct detection experiments due to the very small momentum transfer. The explicit shift symmetry breaking required to generate radiatively the DM mass, however, also introduces non-derivative DM interactions. I will discuss the associated phenomenology, focusing on scenarios where the pattern of explicit symmetry breaking naturally suppresses the direct detection cross section beyond the reach of current experiments.

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