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Simple Hidden Sector Dark Matter

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A hidden sector that kinetically mixes with the Minimal Supersymmetric Standard Model provides simple and well-motivated dark matter candidates that possess many of the properties of a traditional weakly interacting massive particle (WIMP). These supersymmetric constructions can also provide a natural explanation for why the dark matter is at the weak scale - even if it resides in a hidden sector. In the hidden sector, a natural pattern of symmetry breaking generally makes particles and their superpartners lie around the same mass scale, opening novel possibilities for a variety of cosmological histories and complex indirect detection signatures.

Summary

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