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Not so inelastic Dark Matter

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Models of inelastic (or pseudo-Dirac) dark matter commonly assume an accidental symmetry between the left-handed and right-handed mass terms in order to suppress diagonal couplings. Here we point out that this symmetry is unnecessary, because for Majorana fermions the diagonal couplings are in fact not strongly constrained. Removing the requirement of such an accidental symmetry in fact relaxes the relic density constraint, because additional annihilation modes can contribute, leading to larger viable parameter space. We discuss how the sensitivity of searches for both long-lived particles and missing energy signatures is modified in such a set-up, and explore the relevance of events with two long-lived particles.

Title of the Poster/Talk

Related Papers/Preprints

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