



High Energy Physics - Phenomenology

# Light dark matter in the singlet-extended MSSM

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We discuss the possibility of light dark matter in a general singlet extension of the MSSM. Singlino LSPs with masses of a few GeV can explain the signals reported by the CRESST, CoGeNT and possibly also DAMA experiments. The interactions between singlinos and nuclei are mediated by a scalar whose properties coincide with those of the SM Higgs up to two crucial differences: the scalar has a mass of a few GeV and its interaction strengths are suppressed by a universal factor. We show that such a scalar can be consistent with current experimental constraints, and that annihilation of singlinos into such scalars in the early universe can naturally lead to a relic abundance consistent with the observed density of cold dark matter.

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