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Discovering dark matter

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Abstract

Much effort has been devoted to the study of weak scale particles, e.g. supersymmetric neutralinos, which have a relic abundance from thermal equilibrium in the early universe of order what is inferred for dark matter. This does not however provide any connection to the comparable abundance of baryonic matter, which must have a non-thermal origin. Interestingly "dark baryons" of mass ~ 5 GeV from a hidden strongly interacting sector could naturally provide the dark matter and are consistent with putative (controversial) signals in experiments such as CoGeNT, CRESST and DAMA. Searches for monojet signals at the LHC provide a complementary probe of such particles.