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Dark matter models with two mediators

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A reliable comparison of different dark matter searches requires models that satisfy certain consistency conditions like gauge invariance and perturbative unitarity. These conditions can easily be satisfied in U(1)' extensions of the Standard Model, where a fermionic dark matter candidate as well as a new Z' gauge boson obtain their mass from the spontaneous breaking of the U(1)' by a dark Higgs. These dark matter scenarios contain two mediators, the new gauge boson and the dark Higgs, which can also act as final states in dark matter annihilation. I will discuss the general framework of consistent dark matter models with two mediators, and then review a class of dark matter models where baryon number is a local gauge symmetry.

Summary

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