

Dark matter models with two mediators

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Abstract: 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.

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