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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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