

Gauge fields as dark matter

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I discuss the scenario of a dark $U(1)$ or $SU(N)$ gauge group coupled to the Standard Model via the Higgs portal. It turns out that minimal CP-conserving hidden Higgs sectors entail stable massive gauge fields which fall into the WIMP category of dark matter candidates. For $SU(N)$, $N > 2$, DM consists of three components, two of which are degenerate in mass. In all of the cases, there are substantial regions of parameter space where the direct and indirect detection as well as relic abundance constraints are satisfied.

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