

Opening windows with Isospin-Violating Dark Matter

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We consider the effect of isospin-violating dark matter-nucleon interactions on direct detection constraints in the regime of small dark matter mass and large scattering cross section. Isospin-violation can lead to both reductions in sensitivity (due to a reduced cross section for scattering with nuclei in the detector) and enhancements in sensitivity (due to a reduced cross section for scattering in the overburden). Isospin-violating effects can thus open up some closed regions of parameter space, while closing off other regions.

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