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# Experimental signatures for direct, indirect, and collider detection of a 70 GeV dark matter WIMP with precisely-defined second-order gauge couplings

*Thursday 30 March 2023 19:00 (15 minutes)*

We discuss the potential for discovery of a recently proposed dark matter WIMP which has a mass of about 70 GeV/c$^2$ and only second-order couplings to W and Z bosons. There is evidence that indirect detection may already have been achieved, since analyses of the gamma rays detected by Fermi-LAT and the antiprotons observed by AMS-02 are consistent with 70 GeV dark matter having our calculated $\langle \sigma_{ann} v \rangle \approx 1.2\$\backslash times 10\^{}\{-26\} $cm\^{}3/s. The estimated sensitivities for LZ and XENONnT indicate that these experiments may achieve direct detection within int$ $section to be slightly above 10\^{}\{-48\} cm\^{}2\$$. Other experiments such as PandaX, SuperCDMS, and especially DARWIN should be able to confirm on a longer time scale. The high-luminosity LHC might achieve collider detection within about 15 years, since we estimate a collider cross-section slightly below 1 femtobarn.

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