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Goldstone Fermion Dark Matter

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We propose that the fermionic superpartner of a weak-scale Goldstone boson can be a natural WIMP candidate. The p-wave annihilation of this ‘Goldstone fermion’ into pairs of Goldstone bosons automatically generates the correct relic abundance, whereas the XENON100 direct detection bounds are evaded due to suppressed couplings to the Standard Model. Further, it is able to avoid indirect detection constraints because the relevant s-wave annihilations are small. The interactions of the Goldstone supermultiplet can induce non-standard Higgs decays and novel collider phenomenology. This talk is based on arXiv:1106.2162.

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