

Present and projected sensitivities of Dark Matter direct detection experiments to effective WIMP-nucleus couplings

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Assuming for WIMPs a Maxwellian velocity distribution in the Galaxy we explore in a systematic way the relative sensitivity of present and projected Dark Matter direct detection experiments to each of the 14 couplings that parameterize the most general non-relativistic effective Hamiltonian allowed by Galilean invariance for the elastic scattering off nuclei of WIMPs up to spin 1/2. We perform our analysis in terms of two free parameters: the WIMP mass and the ratio between the WIMP-neutron and the WIMP-proton couplings.

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