

Abstract

The possibility of direct detection of light fermionic dark matter in neutrino detectors is explored from a model-independent standpoint. All operators of dimension six or lower that can contribute to the interaction of a dark Majorana or Dirac fermion with nuclei are considered. Constraints on these operators are then obtained from the dark matter lifetime and its decay modes that produce visible γ rays or electrons. The existing constraints on light dark matter from relic density arguments, supernova cooling rates, and big-bang nucleosynthesis are then reviewed.