

Abstract Submitted
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Nuclear Recoil Background Evaluation for WIMP Searches

DONGMING MEI, The University of South Dakota, ANDREW HIME, Los Alamos National Laboratory, CHRISTINA KELLER, ZHONGBAO YIN, The University of South Dakota, CLEAN/DEAP COLLABORATION — Nuclear recoils produced by neutrons, alphas and neutrinos as they scatter from target nuclei are important sources of background which must be considered in WIMP searches. PMTs and other detector components may contribute neutrons which generate a source of background. Alphas on the surface of the vessel can also be a serious issue for some of the experiments. And, neutrino-induced recoils represent a background to low-threshold experiments. We present a comprehensive study of nuclear recoil events induced by neutrons, alpha particle and neutrinos. The sources of neutrons, alphas and neutrinos are discussed. We also show the background reduction techniques for different type of detectors.

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