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Study of Neutrino-Induced Neutrons in Dark Matter Detectors for Supernova Burst Neutrinos NEWTON KWAN, KATE SCHOLBERG, Duke University — When supernova burst neutrinos (1-50 MeV) pass through the Earth, they occasionally interact with the passive shielding surrounding dark matter detectors. When the neutrinos interact, one or two roughly 2 MeV neutrons are scattered isotropically and uniformly, often leaving undetected. Occasionally, these neutrino-induced neutrons (NINs) interact with the detector and leave a background signal similar to a WIMP. The purpose of this study is to understand the effects of NINs on active dark matter detectors during a supernova burst.

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