

Abstract Submitted
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What's Needed, What's Available, Where to Find it, What's Not Available and How to Go About it?¹ WERNER TORNOW, Department of Physics/TUNL Duke University — I briefly summarize some of the nuclear data needed for background correction of existing and future data in neutrino physics studies, double-beta decay and dark-matter searches. The focus is on neutron induced background which can mimic the signal of interest. Here, reactions induced by low-energy neutrons (<30 MeV or so) are of major concern, while higher energy neutrons produce charged-particle events which can be more easily distinguished from the events of interest. Although experimental data for the differential elastic scattering cross section do not exist for all nuclei of interest, they can fairly accurately be calculated using existing models. Inelastic scattering differential cross-section data and (n,2n) reaction data are more of a problem because here both data and calculations are scarce or even completely missing for some of the nuclei of interest. Neutron induced reactions with charged-particles in the exit channel tend to be less of a problem for neutrino physics, double-beta decay and dark-matter studies due to their well defined signature. I will conclude by mentioning the existing facilities where some of the missing data can potentially be measured.

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