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Low-Energy Signals in a NaI(Tl) Scintillation Detector[1] GULDEN OTHMAN, University of Houston , MEDIUM ENERGY PHYSICS GROUP TEAM
— Dark matter is one of the most captivating topics in physics research today. The most widely received candidate for dark matter is of the class called Weakly-Interacting Massive Particles, or WIMPs. There are currently several experiments being conducted by collaborations worldwide with the goal of detecting WIMPs, and to determine their properties. Many of these experiments involve, or have involved, the use of scintillation detectors, such as CsI or NaI(Tl). Thus it is essential to know the response of a scintillator to low energy nuclear recoils due to a WIMP-Nuclear collision. Such knowledge aids in the removal of backgrounds by discriminating between electromagnetic and nuclear-recoil energy depositions. This project provides an analysis of experimental data collected as a result of interactions between a neutron beam and a NaI scintillator.

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