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CDMS Veto Stability Study and Calibration¹ GABRIEL CACERES,

Augustana College — Most experiments searching for dark matter particles have been led deep underground to minimize the background produced by cosmic rays. The Cryogenic Dark Matter Search (CDMS) lies $^{1}/_{2}$ mile underground in the Soudan Mine in Minnesota. Even though the muon rate is lowered by a factor of $\sim 10^{5}$, the rate is still high enough to produce background signals. To solve this problem, scintillator panels have been placed around the detector to veto cosmic induced events. This work studies the behavior over time of the scintillator veto panels. By analyzing and tracking the response to a LED pulser system, the stability was determined to be within 3%. The absolute energy scale of the spectrum was then calibrated using radioactive sources, as well as the muon distribution. Knowing the absolute energy scale and where the veto trigger threshold lies provides useful information for calculating the amount of background that can be rejected.

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