

Abstract Submitted
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Surface Performance of a Big Liquid Scintillation Detector for Measuring Neutrons¹ DONGMING MEI, CHAO ZHANG, University of South Dakota, FRED GRAY, Regis University — Characterizing neutron background is extremely important to the success of rare event physics research such as neutrinoless double beta decay and dark matter search. We developed a neutron detector that is built with an aluminum tube filled with 12 liter liquid scintillators. The detector is about one meter in length and five inches in diameter. The inner surface of the detector is painted with specular reflector and there are two 5" PMTs (Hamamatsu H4144) attached at both ends. The detector is well calibrated with cosmic muons and radioactive sources. Good neutron/gamma discrimination is found from few MeV to 20MeVs. We report the measured result for room neutrons at the surface.

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