

Abstract Submitted
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A measurement of underground neutral particle fluxes with the SciBath detector LANCE GARRISON, REX TAYLOE, ROBERT COOPER, LORI REBENITSCH, REMMINGTON THORNTON, HANS-OTTO MEYER, Indiana University - Bloomington — The SciBath detector is an 80 liter liquid scintillator detector read out by a three dimensional grid of 768 wavelength-shifting fibers. Initially conceived as a charged particle detector for neutrino studies that could image charge particle tracks in all directions, it is also sensitive to fast neutrons (1-100 MeV) with high efficiency and good energy resolution. Across the neutron spectrum of interest, the detection efficiency and energy resolution are expected to be nearly 30%. Furthermore, tracking algorithms are being developed to not only measure the neutron energy spectrum with high resolution but to image the neutron angular flux distribution. At the end of December the apparatus finished a two month run to measure neutrinos and neutrons 100 meters underground in the Fermilab MINOS near-detector area. An overview of the detector performance during this run will be presented as well as the latest results from the deployment. These results can be extrapolated to future measurements of fast-neutron backgrounds at other underground facilities.

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