

Abstract Submitted
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Optical Attenuation in MoNA and LISA Detector Elements¹ LO-GAN RICE, JONATHAN WONG, Wabash College, MONA COLLABORATION — The MoNA collaboration is a research group of students and faculty from 13 primarily undergraduate institutions, with detectors at the NSCL: MoNA (Modular Neutron Array) and the newly-built LISA (Large multi-Institutional Scintillating Array). These arrays each have 144 plastic scintillating bars. When a neutron collides with a hydrogen nucleus within the plastic, photomultiplier tubes at either end of the bar detect the scintillation photons. Their arrival times are used to determine the position of the event, but as the light travels through the detector it loses intensity exponentially. How dramatic this loss is can be described by a parameter called the attenuation length, with larger attenuation lengths corresponding to lower loss. Recently the MoNA collaboration conducted its LISA commissioning experiment investigating two-neutron decay states of ^{25}O . As a part of LISA's commissioning, we measured the attenuation lengths of the individual detector bars that make up the LISA array and compared these lengths with those of the older MoNA array. We found that the LISA bars had a larger attenuation length on average with impacts on detector efficiency and effective threshold.

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