Abstract Submitted
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Neutron Veto Prototype for the SuperCDMS SNOLAB Experiment[1] ABAZ KRYEMADHI, Messiah College, BEN LOER, Fermi National Laboratory, KATRINA SCHROCK, MATTHEW BRESSLER, Messiah College, SUPERCDMS COLLABORATION — Both cosmology and particle physics converge on Weakly Interacting Massive Particles as good candidates for dark matter. SuperCDMS will use cryogenic germanium and silicon crystals at SNOLAB to search for WIMP interactions. Because neutrons can mimic WIMP interactions, SuperCDMS considers deploying a neutron veto detector. The veto is made of liquid scintillator doped with an agent that enhances neutron capture and produces alpha particles. Light emitted from these reactions then gets captured by wavelength-shifting fibers and routed to silicon photodetectors. We designed and built a 1/4 scale prototype in order to understand the light output, characterize the photodetectors, tune simulation parameters, and understand the process of construction.

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