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Neutron Veto Prototype for the proposed SuperCDMS Experiment[1] ABAZ KRYEMADHI, KATRINA SCHROCK, MATTHEW BRESSLER, Messiah College, FNAL SUPERCDMS TEAM — Both cosmology and particle physics converge on Weakly Interactive Massive Particles as a good candidate for dark matter. We helped develop a neutron veto detector for SuperCDMS experiment because neutrons produce the same interaction as Weakly Interacting Massive Particles. The detector is made of liquid scintillator doped with an agent that captures neutrons and produces alpha particles that interact and create light, which then gets captured by fibers and routed to photodetectors. We designed a fourth scale prototype in order to understand the light output, characterize the photodetectors, compare to simulation, and understand the process of construction.

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