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Simulation of Photon Detector Prototypes for LBNE ANDREA SHACKLOCK, NORM BUCHANAN, RYAN WASSERMAN, Colorado State University — LBNE is the Long Baseline Neutrino Experiment utilizing an intense beam of neutrinos originating at Fermilab. Neutrinos will be sent from Fermilab to the Homestake mine in Lead, South Dakota, where neutrino oscillations will be studied. A photon detector, based on wavelength shifting plastics and silicon photomultipliers, will be part of the LBNE far detector and used to determine the start time of an event. In order to determine the optimal design of the photon detector simulations are necessary. Using Geant4 and LarSoft, we have made representations of photon detector prototypes and test facilities used to study them. I will present details of the models developed for the simulations, as well as comparisons between simulation and measured data.

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