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CiSE Computational Physics Challenge Winner: Analysis of Photon Transport in Scintillating Target Prototypes JOHN BARRETT, RORY MISKIMEN[1], University of Massachusetts Amherst — A proposed experiment to measure the spin polarizabilities of the proton through double polarized Compton scattering requires a polarized proton target. One possible option for the target material that would enable background rejection is the use of a polarized scintillator. However the optimal geometry of this scintillating target is difficult to determine. By developing a Monte Carlo simulation of light transport in several proposed geometries it is possible to characterized which is the most effective design to collect scintillation light. We present our computational algorithm and recommendations for the future scintillating target geometry.

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