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Optimization of light collection scheme for forward hadronic calorimeter for STAR experiment at RHIC MARIA SERGEEVA, UCLA — We present the results of the optimization of a light collection scheme for a prototype of a sampling compensated hadronic calorimeter for upgrade of the STAR detector at RHIC (BNL). The absolute light yield and uniformity of light collection were measured with the full scale calorimeter tower for different types of reflecting materials, realistic mechanical tolerances for tower assembly and type of coupling between WLS bars and photo detectors. Measurements were performed with conventional PMTs and silicone photo multipliers. The results of these measurements were used to evaluate the influence of the optical collection scheme on the response of the calorimeter using GEANT4 MC. A large prototype of this calorimeter is presently under construction with the beam test scheduled early next year at FNAL.

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