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Results from a prototype Lead-Scintillating Fiber Calorimeter for use as a STAR Forward Detector PRASHANTH SHANMUGANATHAN, Kent State Univ - Kent, STAR COLLABORATION — Forward instrumentation consisting of hadronic as well as electromagnetic calorimeters will achieve several physics goals at RHIC. Examples include studying the internal structure of nucleons and properties of nuclear matter through measurement of forward jets and long-range correlations. Earlier studies that pixelized AGS E864 lead-scintillating fiber calorimeter cells (10 cm²x117 cm) into a three by three array of 3.3 cm² pixels showed that neutral pions can be reconstructed to E>15 GeV and hadronic shower shapes can be distinguished from EM shower shapes with 90% confidence. In this contribution, we compare the light collection efficiency from total internal reflective light guides with that of a Fresnel lens system; light signals for both guide types are recorded using photomultiplier tubes (PMT) and silicon photomultipliers (SiPM). The Fresnel lens system allows better magnetic shielding of PMTs from the STAR magnet fringe field and focuses light into the small sensitive area of the SiPM. A prototype of these designs consisting of a two by three array of cells (54 pixels) was mounted on the east side of the STAR detector during Run16 and 80 million events from Au+Au collisions at $\sqrt{s_{NN}}=200$ GeV were recorded. In this talk, we will present comparisons

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