

Abstract Submitted  
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**Silicon Photomultiplier Characterization for sPHENIX Calorimeters** MEGHAN TANNER, MICHAEL SKOBY, CHRISTINE AIDALA, University of Michigan, SPHENIX COLLABORATION — Silicon photomultipliers (SiPMs) are preferable to photomultiplier tubes due to their small size, insensitivity to magnetic fields, low operating voltage, and capability of detecting single photons. The sPHENIX collaboration at RHIC will use SiPMs in their proposed electromagnetic and hadronic calorimeters. The University of Michigan is assembling and implementing a test stand to characterize the dark count rate, temperature dependence, gain, and photon detection efficiency of SiPMs. To more accurately determine the dark count rate, we have constructed a light tight box to isolate the SiPM, which surrounds an electronics enclosure that protects the SiPM circuitry, and installed software to record the output signals. With this system, we will begin to collect data and optimize the system to test arrays of SiPMs instead of single devices as the proposed calorimeters will require testing approximately 115,000 SiPMs.

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