

Abstract Submitted
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Measuring characteristics of Hamamatsu Multi Pixel Photon Counter for Electromagnetic Calorimeters ADAM LAMSON, Rensselaer Polytechnic Institute, EIC RD1 TEAM — The poster presents the results of the characterization of the Hamamatsu Multi-pixel photon counter (MPPC), a type of Silicon Photomultiplier (SiPM), which will be used for the readout of a prototype barrel electromagnetic calorimeter (EMC). The next generation of high-energy particle experiments, such as the proposed Electron Ion Collider (EIC) at Brookhaven National Labs, require high resolution EMCs with 4π coverage. SiPMs are attractive because of their ability to operate in the presence of strong magnetic fields and high neutron fluxes while retaining a compact size. We analyzed a large batch (280) of these detectors for their gain, relative photon detection efficiency and optical cross talk as a function of bias voltage and temperature. Prototype EIC detectors designed with these SiPM calorimeters will be tested at FermiLab in February 2014.

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