

Abstract Submitted  
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**Calorimeter Development for the New Muon g-2 Experiment**

AARON FIENBERG, University of Washington, MUON G-2 COLLABORATION  
— In the new muon g-2 experiment, determination of the anomalous magnetic moment requires energy and timing measurements of decay electrons. The calorimeter being designed to make these measurements is an array of lead fluoride ( $\text{PbF}_2$ ) crystals coupled to silicon photomultipliers (SiPMs). Cherenkov light produced in the crystals allows for excellent timing and energy resolutions while the SiPMs' insensitivity to magnetic fields makes them a great choice for the experiment. Development of this detector is ongoing and recent work includes cosmic ray tests to evaluate the effects of different crystal wrappings, operation of SiPMs in a 1.5 T magnetic field, and evaluation of a prototype crystal array with an electron beam provided by the Stanford Linear Accelerator. We will present results from these tests and outline how they show that this novel detector will meet or exceed our design specifications.

Aaron Fienberg  
University of Washington

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