

Abstract Submitted
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A Fast, Compact, Segmented Tungsten/SciFi Calorimeter

RONALD MCNABB, JASON CRNKOVIC, University of Illinois at Urbana Champaign, KEVIN LYNCH, Boston University, DAVID HERTZOG, University of Illinois at Urbana Champaign — The new E969 muon g-2 experiment at BNL will need to run at significantly higher stored muon rate to collect the necessary statistics in a reasonable time. The higher instantaneous decay electron rate will require a new segmented calorimeter to keep the systematic error from pileup small. A fast, tungsten-scintillating fiber calorimeter with PMT readout has been designed for this purpose. The high density of tungsten results in compact showers, which are necessary both to distinguish multiple simultaneous showers and to satisfy strict space constraints. Beam tests and Monte Carlo simulations of a single calorimeter segment have been performed. Analysis of these studies indicates that the new design should satisfy the requirements of the g-2 experiment.

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