

Abstract Submitted  
for the DNP08 Meeting of  
The American Physical Society

**Future Prospects for a Muon g-2 Experiment** DAVID HERTZOG, CHRIS POLLY, University of Illinois at Urbana-Champaign, NEW MUON G-2 COLLABORATION — The final results from the muon g-2 experiment at Brookhaven National Laboratory were published in 2004. The difference between the final experimental result and the current theoretical prediction for  $a_\mu$  reveals a  $3.4\sigma$  discrepancy with the Standard Model, hinting at the possibility of new particles entering via quantum fluctuations. The experiment ended in a statistical error dominated regime, thus enabling a future generation muon g-2 experiment to be pursued with a higher muon flux and relatively minor modifications to the basic technique. The motivation for a new experiment will be discussed along with a description of design improvements and siting considerations for a new effort at BNL, FNAL, or JPARC.

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Date submitted: 02 Jul 2008

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