

Abstract Submitted  
for the MAR13 Meeting of  
The American Physical Society

**Fundamental limitations on force sensing due to patch potentials**

RYAN BEHUNIN, Los Alamos National Laboratory, LOS ALAMOS NATIONAL LABORATORY COLLABORATION, INDIANA UNIVERSITY-PURDUE UNIVERSITY INDIANAPOLIS COLLABORATION, UNIVERSITY OF BIRMINGHAM COLLABORATION — In this talk I will discuss some of the current methods used for measuring non-Newtonian corrections to gravity at short separation. When polycrystalline metallic test masses are used in these experiments patch potentials may provide a large source of noise. I'll present a simple model to quantify patch effects from which insights may be gained for minimizing deleterious effects on force signal to noise in these experiments.

Ryan Behunin  
Los Alamos National Laboratory

Date submitted: 07 Nov 2012

Electronic form version 1.4