

Abstract Submitted  
for the DNP10 Meeting of  
The American Physical Society

**Applications with Near-Barrier Photo-Fission Reactions in Uranium Isotopes**<sup>1</sup> M.S. JOHNSON, J.M. HALL, D.P. MCNABB, LLNL, M.J. TUFFLEY, SJSU, M.W. AHMED, S. STAVE, H.R. WELLER, Duke U/TUNL, H.J. KARWOWSKI, J.R. TOMPKINS, UNC/CH — Homeland security programs are developing compact, linearly polarized, quasi-monoenergetic photon sources to probe containers for special nuclear material (SNM). These sources are important in national security applications within the commerce system because of the low dose compared to current bremsstrahlung-based sources used for radiography, and important safety concern. Basic radiography only offers density distributions in cargo containers and does not distinguish fissionable materials from non-fissionable, high-Z materials. One possible usage of quasi-monoenergetic sources is to look for photo-neutrons, which may be subject to lower backgrounds, especially near the barrier where photo-fission neutrons have a high energy tail relative to (g,n). For this presentation, we discuss the results of recent near-barrier photo-fission resonance measurements in uranium isotopes. We will present our study of the neutron data and discuss its viability as a signature for SNM detection applications.

<sup>1</sup>This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

Micah Johnson  
LLNL

Date submitted: 01 Jul 2010

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