

Abstract Submitted  
for the HAW14 Meeting of  
The American Physical Society

**Digital Shaping Algorithms for GODDESS** SARAH-JANE LONSDALE, Rutgers University, University of Surrey, JOLIE CIZEWSKI, ANDREW RATKIEWICZ, Rutgers University, STEVEN PAIN, Oak Ridge National Laboratory — Gammasphere-ORRUBA: Dual Detectors for Experimental Structure Studies (GODDESS) combines the highly segmented position-sensitive silicon strip detectors of ORRUBA with up to 110 Compton-suppressed HPGe detectors from Gammasphere, for high resolution for particle-gamma coincidence measurements. The signals from the silicon strip detectors have position-dependent rise times, and require different forms of pulse shaping for optimal position and energy resolutions. Traditionally, a compromise was achieved with a single shaping of the signals performed by conventional analog electronics. However, there are benefits to using digital acquisition of the detector signals, including the ability to apply multiple custom shaping algorithms to the same signal, each optimized for position and energy, in addition to providing a flexible triggering system, and a reduction in rate-limitation due to pile-up. Recent developments toward creating digital signal processing algorithms for GODDESS will be discussed. This work is supported in part by the U.S. D.O.E. and N.S.F.

Sarah-Jane Lonsdale  
Rutgers University, University of Surrey

Date submitted: 19 Jun 2014

Electronic form version 1.4