Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

DESCANT - The DEuterated SCintillator Array for Neutron Tagging VINZENZ BILDSTEIN, P.E. GARRETT, D. BANDYOPADHAY, J. BANGAY, L. BIANCO, G. DEMAND, B. HADINIA, K.G. LEACH, C. SUMITHRARACHCHI, J. WONG, University of Guelph, S.F. ASHLEY, B.P. CRIDER, M.T. MCELLISTREM, E.E. PETERS, F.M. PRADOS-ESTÉVEZ, S.W. YATES, University of Kentucky, J.R. VANHOY, United States Naval Academy, G.C. BALL, A.B. GARNSWORTHY, G. HACKMAN, C.J. PEARSON, TRIUMF, F. SARAZIN, Colorado School of Mines — The DESCANT array at TRIUMF is designed to track neutrons from RIB experiments. DESCANT is composed of 70 close-packed deuterated organic liquid scintillators coupled to digital fast read-out ADC modules. This configuration will permit online pulse-shape discrimination between neutron and γ-ray events. The anisotropy of the $n-d$ scattering will allow distinction of higher neutron multiplicities from scattering within the array and determination of the neutron energy spectrum directly from the pulse-height spectrum without using TOF. A prototype detector has been tested with monoenergetic neutrons at the accelerator laboratory of the University of Kentucky and a ^{24}Mg(^{3}He, n)^{26}Si experiment has been performed with eight DESCANT detectors and two HPGe detectors. The results of the tests and the status of DESCANT will be presented.

Vinzenz Bildstein
Univ of Guelph

Date submitted: 27 Jun 2014 Electronic form version 1.4