Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

The neutron detector array DESCANT 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, A.B. GARNSWORTHY, C.J. PEARSON, TRIUMF — The DESCANT array at TRIUMF is designed to track neutrons from RIB experiments. DESCANT is comprised of 70 close-packed deuterated liquid organic 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 to distinguish higher neutron multiplicities from scattering within the array and to determine the neutron energy spectrum directly from the pulse-height spectrum without using TOF. Comparative type-testing of candidate small deuterated scintillators to non-deuterated scintillators have been performed at the University of Kentucky. Results of these type-testing measurements will be presented together with first designs of the firmware written for the fast sampling ADC modules.

Vinzenz Bildstein
University of Guelph

Date submitted: 28 Jun 2013 Electronic form version 1.4