

Abstract Submitted
for the HAW09 Meeting of
The American Physical Society

Proton pairing correlation studies¹ A. ROBERTS, J.J. KOLATA, Univ. of Notre Dame, A. VILLANO, F.D. BECCHETTI, Univ. of Michigan, J.P. SCHIFFER, J.A. CLARK, B.P. KAY, K.E. REHM, Argonne National Laboratory, S.J. FREEMAN, A.M. HOWARD, Univ. of Manchester — A program to study proton pairing correlations in nuclei relevant for neutrinoless double β decay has been initiated at Notre Dame. The results will complement neutron-pairing studies [S.J. Freeman, et al., Phys. Rev. C75, 05301R (2007)], helping to constrain theoretical calculations of this decay mode. High-precision measurements of the ($^3\text{He},n$) reaction using a pulsed beam and a large neutron detector are in progress. The necessary 250 keV resolution at a neutron energy of 25 MeV is well within reach. Recent results obtained with a ^{26}Mg target will be presented. This well-studied system serves as a calibration for measurements on $^{74,76}\text{Ge}$ and other targets. Ground-state cross sections will be obtained with relative precision of $<5\%$ and absolute accuracy of $<10\%$. Proton pairing vibrations (if any) will be identified and measured.

¹This work was supported by the US NSF under Grant No. PHY0652591, by the US Dept. of Energy, Office of Nuclear Physics, and the UK Engineering and Physical Sciences Research Council.

James Kolata
University of Notre Dame

Date submitted: 24 Jun 2009

Electronic form version 1.4