

Abstract Submitted  
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**The Parity Violating Longitudinal Asymmetry in the capture of Cold Neutrons on  $^3\text{He}$ .** MICHAEL GERICKE, University of Manitoba, J. DAVID BOWMAN, Oak Ridge National Laboratory, CHRISTOPHER CRAWFORD, University of Kentucky, SEppo PENTTILA, Oak Ridge National Laboratory, W. MICHAEL SNOW, Indiana University — Within the framework of  $\chi$ PT based effective field theory models the nucleon-nucleon (NN) weak interaction is described in terms of various effective coupling constants, of which there are at least 4 but generally up to 15 without the application of cutoffs. There are few possible parity violating NN experiments that could constrain or test the predicted coupling strengths and they are often very challenging to implement. We have analyzed the feasibility of a new experiment which would measure the parity violating longitudinal asymmetry in cold neutron capture on an unpolarized  $^3\text{He}$  target. The great advantage of this experiment would be that there are only a handful of components needed and that these employ common, well known technologies without the need for lengthy R&D. We will present a reference design and run time estimate as well as an analysis of systematic effects to show that this would be a feasible experiment which could run at the Spallation Neutron Source, Oak Ridge.

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