

Abstract Submitted
for the DNP12 Meeting of
The American Physical Society

A next generation neutron-antineutron oscillations experiment using very cold and ultracold neutrons ROBERT PATTIE, North Carolina State University, NNBARX COLLABORATION — Neutron-antineutron oscillation experiments with free neutrons are sensitive to new interactions which violate baryon number by 2 units. As such, this phenomenon can be connected to some of the central issues in particle physics: the origin of the baryon-antibaryon asymmetry and the origin of neutrino mass. Experiments with free neutrons promise roughly three orders of magnitude improvement in the discovery potential for this phenomenon, exceeding current or planned limits for neutron-antineutron oscillations in underground experiments. We review the motivation for neutron-antineutron oscillation measurements and some strategies for a next generation neutron-antineutron oscillation experiment with very cold and ultracold neutrons.

Robert Pattie
North Carolina State University

Date submitted: 02 Jul 2012

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