

Abstract Submitted
for the APR09 Meeting of
The American Physical Society

Systematic Effects of a Gaseous Argon Detector for Anti-Neutrino Scatters¹ KAREEM KAZKAZ, ADAM BERNSTEIN, Lawrence Livermore National Laboratory, MICHAEL FOXE, Purdue University, CHRIS HAGMANN, Lawrence Livermore National Laboratory, IGOR JOVANOVIĆ, Purdue University, PETER SORENSEN, WOLFGANG STOEFFL, Lawrence Livermore National Laboratory, CELESTE WINANT, University of California, San Francisco — Dual-phase, noble-element detectors are a useful choice for searching for coherent neutrino scatters, given their low energy threshold and electron transport properties. We have constructed a single-phase argon detector to study the systematics of the gaseous region of a planned dual-phase detector, as well as to measure the nuclear quenching factor of gaseous argon at a nuclear recoil energy of 8 keV. We will report on our progress to improve the signal from our single-phase detector, including verification of our optical response model, gas purification, fiducialization of the active volume, and anticipated gas content at cryogenic temperatures.

¹This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory in part under Contract W-7405-Eng-48 and in part under Contract DE-AC52-07NA27344. Funded by Lab-wide LDRD.

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Date submitted: 14 Jan 2009

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