

Abstract Submitted
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Observing coherent neutrino/nuclear scatters with a dual-phase argon detector¹ KAREEM KAZKAZ, ADAM BERNSTEIN, LLNL, MICHAEL FOXE, Purdue University, CHRISTIAN HAGMANN, LLNL, TENZING JOSHI, UC Berkeley, IGOR JOVANOVIĆ, Purdue University, BRANDON MORRISON, University of Chicago, PETER SORESENSEN, WOLFGANG STOEFFL, LLNL — Coherent neutrino/nuclear scatters are a prediction of the Standard Model of particle physics, though they have not yet been observed in the laboratory. We are planning an argon-based dual-phase detector to observe these scatters, and our research program involves three detectors: a single-phase detector to study the systematics of the signal volume, a small dual-phase detector to measure the nuclear quenching factor at 8 keVee, and a large dual-phase detector to search for the neutrino interactions themselves. We will present recent results of the systematic effects of the single-phase detector, including a measurement of gas content via electron drift speed. We will also present a progress update on construction of the small dual-phase detector, as well as a possible design for the large dual-phase detector.

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Kareem Kazkaz
LLNL

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