

Abstract Submitted
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An Experimental Overview of Ultra-Cold Neutron Production in Solid Oxygen through Magnetic Interactions DANIEL SALVAT, Indiana University, CHEN-YU LIU¹, CHRISTOPHER LAVELLE, PATRICK MCCHESENEY, GREGORY MANUS, YU FENG, Indiana University, YUNCHANG SHIN, University of Kentucky, ALBERT YOUNG, GUILHEM RIBEILL, ADAM HOLLEY, North Carolina State University, CHRIS MORRIS, ANDY SAUNDERS, MARK MAKELA, Los Alamos National Laboratory — We present an experiment to investigate UCN production in solid oxygen under applied magnetic field, and discuss results from data collected at Los Alamos Neutron Science Center in 2008. The instrument is designed to study UCN production as a function of temperature, source volume, and possesses unique magnetic field capabilities up to 5.5 Tesla. We measure incident neutron energy dependence using the beam-line's cold-neutron choppers. The data suggest a comparable UCN production rate between oxygen and deuterium, and surprising phase dependent production in oxygen.

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