

Abstract Submitted  
for the DAMOP14 Meeting of  
The American Physical Society

**Searching for spin-dependent short-range forces using nuclear magnetic resonance**<sup>1</sup> ANDREW GERACI, University of Nevada Reno, ASIMINA ARVANITAKI, Stanford University — Axions are particles predicted to exist in order to explain the apparent smallness of the neutron electric dipole moment. While also being a promising candidate for dark matter, in tabletop experiments axions can mediate novel macroscopic forces between matter objects. I will describe a new method for detecting short-range forces from axion-like particles based on nuclear magnetic resonance in hyperpolarized Helium-3. The method can potentially improve previous experimental bounds by several orders of magnitude and can probe deep into the theoretically interesting regime for the QCD axion.

<sup>1</sup>Supported in part by NSF-PHY 1205994

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Date submitted: 31 Jan 2014

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