

Abstract Submitted
for the APR17 Meeting of
The American Physical Society

A new search for the permanent electric dipole moment of ^{129}Xe at FRM-II¹ N. SACHDEVA, T. CHUPP, S. DEGENKOLB, University of Michigan, USA, P. FIERLINGER, E. KRAEGLOH, F. KUCHLER, T. LINS, J. MEINEL, B. NIESSEN, S. STUIBER, W. A. TERRANO, Technische Universität München, Germany, M. BURGHOFF, I. FAN, W. KILIAN, S. GRÜNEBERG, A. SCHNABEL, F. SEIFERT, D. STOLLFUSS, L. TRAHMS, J. VOIGHT, Physikalisch-Technische Bundesanstalt, Germany, E. BABCOCK, Z. SALHI, Jülich Centre for Neutron Science, Germany, J. HUNEAU, J. SINGH, Michigan State University and NSCL, USA — CP-violating sources in beyond-the-standard-model physics, necessary to explain baryon asymmetry, give rise to permanent electric dipole moments (EDMs). Precise EDM measurements of the neutron, electron, paramagnetic and diamagnetic atoms constrain CP-violating parameters. The previous limit for the ^{129}Xe EDM is $6 \times 10^{-27} e \cdot \text{cm}$ (95% CL). The HeXeEDM experiment at FRM-II (Munich Research Reactor) utilizes an ultralow magnetic field in a high-performance magnetically shielded room and ^3He comagnetometer to improve the limit by up to three orders of magnitude. In the experiment, hyperpolarized ^3He and ^{129}Xe precession signals are detected with a SQUID magnetometer array in the presence of applied electric and magnetic fields. Recent progress will be presented.

¹This work is supported US Department of Energy Grant No. DE FG02 04 ER41331.

Natasha Sachdeva
Univ of Michigan - Ann Arbor

Date submitted: 30 Sep 2016

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