Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

Charge radii of neutron-deficient ^{52,53}Fe[1] K. MINAMISONO, B. A. BROWN, A. J. MILLER, NSCL/Dep. Phys. Astron., MSU, D. M. ROSSI, B. MAAß, W. NÖRTERSHÄUSER, Insti. für Kernphysik, TU Darmstadt, D. GARAND, C. SUMITHRARACHCHI, NSCL/Dep. Phys. Astron., MSU, P. F. MANTICA, FRIB/Dep. Chem., MSU, R. BEERWERTH, S. FRITZSCHE, Helmholtz Insti. Jena, A. KLOSE, Dep. Chem., Augustana Univ., Y. LIU, Phys. Div., Oak Ridge National Lab., P. MLLER, Phys. Div., Argonne National Lab., M. R. PEARSON, TRIUMF — Shell closures can be identified as kinks in the chain of charge radii, $\langle r^2 \rangle$, which can be seen for the $N = 28$ neutron shell closure up to $_{25}$Mn. The $\langle r^2 \rangle$ trends in the vicinity of ^{56}Ni is of particular interest, since the ^{56}Ni nucleus is known to be soft. The $\langle r^2 \rangle$ of neutron-deficient ^{52,53}Fe were determined in the present study using the bunched beam collinear laser spectroscopy at BEam COoling and LAser spectroscopy (BECOLA) facility at NSCL/MSU. The presence of a kink in the chain of $\langle r^2 \rangle$ at $N = 28$ for the Fe isotopes was confirmed. The global behavior of the $\langle r^2 \rangle$ of Fe, and Ca thorough Ni isotopes, will be discussed.

[1]Work supported in part by NSF grant PHY-11-02511 and U.S. DOE grant DE-NA0002924.

K. Minamisono
NSCL/Dep. Phys.
Astron., MSU

Date submitted: 30 Jun 2016 Electronic form version 1.4