Abstract Submitted
for the DNP19 Meeting of
The American Physical Society

Polarized Electron Beam for the PREX-II Experiment CARYN PALATCHI, University of Virginia, PREX COLLABORATION — PREX and CREX are parity violating electron scattering experiments currently running at Jefferson Lab. These experiments aim to map the weak charge distribution in nuclei and thus constrain nuclear structure models with implications for the equation of state of highly dense matter, neutron stars, and gravitational waves produced in neutron star collisions. One common crucial component of these experiments is control of helicity correlated false asymmetries in the polarized electron beam. To achieve the parity quality beam necessary for the small systematic uncertainties required in PREX-II, innovative techniques in the electron source were required. A key technology is the newly installed RTP Pockels cell system in the laser optics of the polarized electron source. This talk will describe the development of the this new RTP Pockels cell system in the injector source with precision nano-meter level control capabilities which helped achieve parity quality beam for PREX-II and CREX.

Caryn Palatchi
University of Virginia

Date submitted: 02 Jul 2019 Electronic form version 1.4