## Abstract Submitted for the DPP07 Meeting of The American Physical Society

Electrode Biasing Experiment for Local SOL Control In NSTX<sup>1</sup> LANE ROQUEMORE, STEWART ZWEBEN, PPPL, CHARLES BUSH, ORNL, RICARDO MAQUEDA, Nova Photonics, ROBERT MARSALA, YEVGENY RAITSES, PPPL, RONALD COHEN, DMITRI RYUTOV, MAXIM UMANSKY, LLNL — A set of small electrodes was installed in NSTX to test a proposal to control the width of the scrape-off layer (SOL) by biasing the electrodes to create a strong local poloidal electric field [1,2]. The electrodes in NSTX were  $\sim 3$  cm outside the separatrix near the outer midplane, and were biased in the range -95 V to +50 V with a poloidal separation of  $\sim 1$  cm. The effect of this local biasing was measured with Langmuir probes between the electrodes, and by the NSTX gas puff imaging (GPI) diagnostic located  $\sim 1$  m away along the magnetic fields lines intersecting the electrodes. Changes in the local density and potential were seen by the probes in some cases, but little change was seen in the  $D_{\alpha}$  profile or the turbulent motions as seen by the GPI diagnostic. Analysis of the perpendicular and parallel penetration lengths of the biasing potential and a comparison with the MAST experiments will be presented.

- [1] D. Ryutov et al, Plasma Phys. Cont. Fusion 43 (2001) 1399
- [2] R.H. Cohen et al, Plasma Phys. Cont. Fusion 49 (2007) 1

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