

Abstract Submitted
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RF power deposition effects observed for the scrape off layer in NSTX/NSTX-U and EAST and the accompanying RF effects on divertor Langmuir probes* J. HOSEA, R.J. PERKINS, M. JAWORSKI, N. BERTELLI, G. TAYLOR, PPPL, C. QIN, L. WANG, J. YANG, X.J. ZHANG, ASIPP — Strong RF power deposition effects in the divertor regions have been observed in NSTX for the HHFW regime [1] and in EAST for the minority ICRF regime [2]. On NSTX the RF power deposition in the scrape off layer (SOL) follows the magnetic field lines from in front of the antenna to an RF heat deposition spiral on the divertor regions. The strong SOL deposition and the spiral formation occur for edge densities above the cutoff density in front of the antenna. On EAST the RF heat deposition appears to be less intense as predicted with AORSA simulations. At coupled powers on EAST up to ~ 700 kW here, bands of deposition are observed on the lower divertor. RF deposition is also indicated on Langmuir probes on the lower outer divertors. For divertor probes in NSTX located to intercept field lines passing in the SOL away from the antenna, the floating potential is pushed negatively as expected for RF rectification. Similarly, on EAST the floating potential is pushed negatively for the field lines out in front of the antenna, but more positively for field lines that intercept the antenna/wall. To understand this latter behavior, probe IV characteristics will be investigated on NSTX-U to establish the electron energy distribution and space potential at a set of probes covering the entire SOL field strike point range. [1] R.J. Perkins et al., PoP **22** (2015) 042506. [2] J. Hosea et al., US-PRC MFCW (2016) poster 21. *This work is supported by USDOE Contract No. DE-AC02-09CH11466.

Joel Hosea
PPPL

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