

Abstract Submitted
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RF power deposition explorations in tokamaks using cameras and Langmuir probes¹ J. HOSEA, R. PERKINS, N. BERTELLI, G. TAYLOR, PPPL, C. QIN, L. WANG, J. YANG, X.J. ZHANG, ASIPP, B.H. PARK, S.J. WANG, NFRI — On NSTX the HHFW RF power deposition in the SOL can be large and follows the magnetic field lines from in front of the antenna to an RF heat deposition spiral on the divertor regions [1]. The strong SOL deposition and the spiral formation appear to be properties of the HHFW regime for edge densities above the cutoff density in front of the antenna as simulated with the AORSA RF code [2]. AORSA simulations indicate there is much lower RF deposition in the SOL in the minority ICRF heating regimes of conventional aspect ratio tokamaks [3]. Here, the RF divertor deposition characteristics for NSTX as gleaned from visible cameras and probes are compared to those for EAST and KSTAR. To date no spirals have been confirmed for EAST and KSTAR: most of the RF deposition on the divertor as indicated with probes is peaked near the outer vessel strike radius (OVSR), with a broad deposition pattern outside the OVSR. Cameras indicate considerable RF deposition inside the divertor trenches and some RF power deposition outside them. Work continues to quantify RF power deposition in the SOL at increasing levels of applied RF power.

[1] R. Perkins et al., PRL **109** (2012) 045001;

[2] N. Bertelli et al., Nucl. Fus. **54** (2014) 083004;

[3] N. Bertelli et al., 25 IAEA FES Conf. (2014) TH/P4-14.

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