Abstract Submitted
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Studies of T_e, n_e, and Particle Flux at the Divertor Surface during NBI Heating and Various Divertor Configurations in H-mode Plasmas in NSTX C.E. BUSH, ORNL, R. KAITA, PPPL, R. MAINGI, J.B. WILGEN, ORNL, P. RONEY, E. FREDRICKSON, H.W. KUGEL, B.P. LEBLANC, D. MUELLER, A.L. ROQUEMORE, K. WILLIAMS, S.J. ZWEBEN, PPPL, S.A. SABBAGH, Columbia U., V.A. SOUKHANOVSKII, LLNL, R. MAQUEDA, Nova Photonics, K.C. LEE, UC Davis, R. RAMAN, U of Wash. — Interaction of the plasma with the divertor surfaces has been studied using an array of Langmuir probes and other divertor diagnostics in NSTX NBI heated H-mode plasmas[1]. These studies cover a range of plasma conditions including NBI injection power scans and different divertor configurations. Studies were done mainly with a toroidal field of $B_t = 0.45$ Tesla, plasma current, I_p, in the range of 0.6 to 1.0 MA, and NBI power in the range $1 \leq P_b \leq 6$MW. An array of Langmuir probes, flush mounted with the surfaces of the divertor tiles, was used to obtain divertor T_e, n_e and particle flux. The particle flux to the probes increased with P_b, however, the variation in T_e was more complex. Results were obtained for lower single null (LSN) and double null (DN) divertor configurations and these will be compared. Correlations between probe T_e, n_e, and particle flux, and divertor heat flux, D_α signals and other divertor diagnostics will also be discussed. [1] C. E. Bush, et al., Physics of Plasmas **10** (2003) 1755. *This work was supported by US DoE contract DE-AC05-00OR22725.

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