

Abstract Submitted
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RF power deposition during HHFW heating in NSTX¹ TERESA BRECHT, UMN, R. BELL, J. HOSEA, B. LEBLANC, C.K. PHILLIPS, G. TAYLOR, E. VALEO, J.R. WILSON, PPPL, P.M. RYAN, ORNL, P.J. BONOLI, J. WRIGHT, PSTC-MIT, THE NSTX TEAM — High harmonic fast wave (HHFW) heating and current drive (CD) research on the National Spherical Torus Experiment (NSTX) employs a 12 strap antenna which launches radio frequency (RF) waves into the plasma. Improved core heating efficiency is achieved by moving the onset of wave propagation away from the antenna. Current research focuses on understanding RF power losses at the edge region and power partitioning among the plasma species under various discharge conditions. The full-wave code TORIC was used to simulate discharges of interest using equilibrium fits and temperature and density profiles from NSTX discharges. Ion species concentrations, as well as the launched wavelength strongly effect power deposition. Simulation of the power partitioning in L-mode and H-mode, with and without neutral beam injection (NBI) will be discussed.

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