

Abstract Submitted
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Overview of the 2007 NSTX experimental campaign* D.A. GATES, PPPL, AND THE NSTX TEAM — The 2007 experimental campaign covered a wide range of scientific topics. Measurements of the turbulent electron fluctuation spectrum were made in many different plasma conditions including H-mode plasmas, L-mode plasmas, and plasmas with internal transport barriers using the microwave scattering system which spans a range in wavenumber to $k_{\perp}\rho_e \sim 1$. RWM feedback control has been explored with and without correction of time-varying error fields, allowing mode stabilization and plasma rotation sustainment throughout the discharge. The upgraded lithium evaporator was used extensively and was observed to raise the electron temperature in H-mode plasmas. Improved mode conversion of Electron Bernstein wave emission was observed in high elongation H-mode plasmas after lithium evaporation. A new Alfvén wave was observed, the β -induced Alfvén eigenmode, and β suppression of Alfvén cascades was also observed. Deuterium puffing has been used to produce partial divertor detachment in highly shaped plasmas without affecting plasma performance. A record electron temperature of 4.7keV was achieved using HHFW heating. Plasmas with high elongation $\kappa \sim 2.6$ have been maintained with high non-inductive current fraction $f_{NI} \sim 0.55$. These and other results will be summarized. *This work was supported by DoE contract No. DE-AC02-76CH03073

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