

Abstract Submitted
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Overview of NSTX Research Facility and Recent Experimental Results.¹ MASAYUKI ONO, Princeton University, NSTX TEAM — The 2007 NSTX experimental campaign yielded significant new experimental results in many science areas. Measurements of the turbulent electron fluctuation spectrum made over a wide range of plasma conditions including H-mode, L-mode, and reversed shear plasmas using the high-k microwave scattering system which is capable of local measurements of electron scale turbulence with MHz bandwidth. RWM feedback control has been explored at high beta with and without error field correction. The upgraded lithium evaporator was used to improve the plasma confinement and increase T_e in H-mode plasmas. With lithium evaporation, a significant increase in the Electron Bernstein waves emission was observed in H-mode plasmas at high elongation. For the first time, beta suppression of Alfvén cascades was documented and the beta-induced Alfvén acoustic eigenmode was observed at high beta. Deuterium puffing has been used to demonstrate partial divertor detachment in highly shaped plasmas with little confinement deterioration. A record electron temperature of 4.7keV was achieved on NSTX using HHFW current drive phasing.

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