

Abstract Submitted
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Density Control and Limit(s) in MST MAX WYMAN, BRETT CHAPMAN, STEVE OLIVA, STEWART PRAGER, UW-Madison, STEPHEN COMBS, CHARLIE FOUST, DAN FEHLING, ORNL, BIHE DENG, WEIXING DING, DAVID BROWER, UCLA — The MST RFP is fueled by gas puffing and pellet injection. Densities (n_e) approaching and exceeding the Greenwald limit (n_G) have been achieved. In some discharges, the plasma terminates early when n_e exceeds n_G . In others, n_e exceeds n_G without premature termination. While not yet approaching n_G , we have increased n_e by 70% in improved confinement PPCD plasmas with pellet injection. Sawtooth suppression is observed in high density standard plasmas fueled by pellets and/or gas puffing. Measurements with a multichord far infrared interferometer/polarimeter show that pellet injection peaks the density profile, raising the central density to $5 \times 10^{13} \text{ cm}^{-3}$, while flattening the current profile. Presently, the density achievable with gas puffing is limited by the throughput ($\sim 10 \text{ Torr} \cdot \text{L/s}$ per valve) of MST's puff valve system. A limited number of valves are being modified for higher throughput ($\sim 300 \text{ Torr} \cdot \text{L/s}$ per valve) to achieve higher densities. Work supported by U.S.D.O.E..

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